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UNIVERSITY OF ALBERTA

A STUDY OF PRESCHOOL CHILDREN FROM DIFFERENT ENVIRONMENTS

by

PATRICIA A. KAUFMAN ©

A THESIS
SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND
RESEARCH IN PARTIAL FULFILMENT OF THE
REQUIREMENTS FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY
in
SPECIAL EDUCATION

DEPARTMENT OF EDUCATIONAL PSYCHOLOGY

EDMONTON, ALBERTA
SPRING, 1990

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FACULTY OF GRADUATE STUDIES AND RESEARCH

THE UNDERSIGNED CERTIFY THEY HAVE READ, AND RECOMMEND TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH FOR ACCEPTANCE, A THESIS ENTITLED A STUDY OF PRESCHOOL CHILDREN FROM DIFFERENT ENVIRONMENTS SUBMITTED BY PATRICIA ALISON KAUFMAN IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY IN EDUCATIONAL PSYCHOLOGY, SPECIAL EDUCATION.

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Abstract

Social learning theory hypothesizes that children construct their cognitive knowledge from their reciprocal interactions with the environment. Empirical evidence has pointed to the importance of quality home processes and support in children's social, emotional and conceptual growth (Caldwell, 1978). Some preschool children may enter the formal learning environment at a disadvantage when compared with their peers. However, these disadvantages may be the result of children not having learned how to benefit from experiences rather than from a lack of experiences. In other words, children may not have had the types of reciprocal interactions with adults or the environment that facilitate the development of the skills necessary to succeed in academic subjects. The primary purpose of this study was to assess interactional and perceived interactional factors within the home environments of children across a range of socioeconomic levels. Parents and seventy five children, aged 50 to 62 months, from schools representing a range of socioeconomic strata in urban southeastern Ontario served as subjects. Another purpose of the study was to explore the relationships between/among different levels of stimulation/interactions experienced by preschoolers and their socioemotional and conceptual development. A number of measures of conceptual, socioemotional and self-concept development were obtained from parents, teachers and the children themselves to help determine differences in the development of children with different degrees of quality/quantity of interaction in the home. There was a significant difference in the quality/quantity of interactions in the homes observed. When children were grouped according to a median split on scores of home interaction, there were significant differences between the groups in terms of individually assessed self-concept and concept development in specific areas. There were also significant differences between the groups in the parent(s)' and teachers' perception of cognitive and socioemotional development. Results are discussed in terms of the importance of early identification and intervention.

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CHAPTER I

INTRODUCTION

There has been considerable recent concern over the number of dropouts and early school leavers, with concomitant demands for a return to "excellence in education" (e.g., Radwanski, 1988). Concurrently, there is growing public outrage at government cuts in funding to education at a time when costs are rising (e.g., Siblin, 1989). There would seem to be a need for educators, particularly those involved in research, to begin to look at factors contributing to school dropout and failure. Of course, there is a concomitant need to implement cost-effective methods to prevent these factors from becoming deterrents to academic success (Hodder, Waligun & Willard, 1986).

Early intervention/compensatory programs, the most visible example of which is Head Start (Day, 1983), were initially designed to "remediate the deficits" that lower socioeconomic status (SES) children (see p.10) were presumed to have in order that they could begin school on an equal basis with their more advantaged peers. However, SES has not proven to be a satisfactory explanation for children's differences in cognitive, self-concept and socioemotional development (see p.9). SES may be most valuable as a summary of different motives, values and attitudes rather than as an indicator of academic performance in and of itself (Henderson, 1981). While socioeconomic status may remain relatively static, environmental processes may fluctuate with conditions existing at any given time (Caldwell & Bradley, 1978). For example, variables such as child-rearing practices, the amount and type of reading done, and the value placed on education may differ both within and between families in different economic situations and at different times (Deutsch, 1973).

The type and amount of parent-child interactions and stimulation within the home environment may be a more valuable predictor than SES of children who are likely to be a risk for later academic and/or social difficulties (Wright, 1983). For example, research has pointed to the importance of parent child-rearing practices, parent responsiveness and interactional style (Bradley & Caldwell, 1976) to child development. Social learning theory contends that "psychological functioning is best understood in terms of a continuous reciprocal interactions between behavior and its controlling conditions" (Bandura, 1971, p.2). When a child is reinforced following a particular behavior, s/he has a strengthened expectancy that this sequence will occur in the future (Rotter, 1966). In other words, the evolution of knowledge (conceptual and social development) is dependent upon dynamic reciprocal interaction with increasingly complex social and physical environments (Bronfenbrenner, 1974; Haywood & Switzky, 1986b; Hunt, 1961; Reynolds, 1986; Sameroff & Chandler, 1985). Furthermore, each individual is unique in his/her modification, reorganization and interpretation of experiences (Day, 1983; Vygotsky, 1978). Finally, the child's relationship with his/her environment may be either enhancing or limiting to conceptual and socioemotional development (Caldwell & Bradley, 1978).

There is increasing evidence to suggest that the majority of invisible handicaps, such as learning, emotional, behavioral and perceptual disorders, centre around poorly developed cognitive skills such as planning, organization, problem solving and self-regulation (Schuler & Perez, 1987). Schuler and Perez argue that these deficiencies are closely associated with poorly developed social cognition. It is not an unreasonable assumption that there may be a link between inadequate and/or negative early interactions and poorly developed social cognition and academic problems.

This study is based on the premise that there should be a relationship between the types of interactions and stimulation in children's homes and the children's performance on measures of cognitive and socioemotional development.

Unfortunately, the assessment of preschool children is not always an easy task because their behavior is often controlled by situational or circumstantial factors (Martin, 1986). However, there are assessment devices available which use input from other sources such as parents and teachers. Generally it is recommended that the assessment of preschoolers should include multiple measures in multiple domains involving multiple sources of data (Bagnato & Neisworth, 1985a; Martin, 1986).

It has become increasingly apparent that early intervention programs should be based on an assessment of the children's needs (Wright, 1980a, 1981, 1983). Research would indicate that the most effective prevention/intervention of/with children at-risk for academic and/or socioemotional difficulties may be working directly with parents to improve parenting skills (Garber & Heber, 1981). However, in cases where this is not possible for various reasons, an emphasis on activities and interactions which will enhance socioemotional development at the preschool level may be a viable alternative.

Very little research has been done which investigates the differences in the home environment in terms of stimulation and interactions and the concomitant socioemotional and conceptual (see p.9) development of preschool children from a range socioeconomic backgrounds (Hansford & Hattie, 1982). This study should illuminate some of the relationships between the quality and quantity of home interaction, parent and teacher perceptions of the children's cognitive and socioemotional development, and the level of children's conceptual, socioemotional and self-concept development. It was conceived as a method of examining possible relationships at the earliest age that "prevention" is possible within the education system, at least in Ontario, i.e., at the junior kindergarten or "preschool" level.

This thesis begins with a discussion of the theoretical framework upon which the research was based, including theories of child development, the supposed effects of socioeconomic status on child development, the effects of home interactions and parent beliefs on child development, self-concept and behavior, and the implications of early identification and intervention. Following a description of methodology and results, the findings of this study are discussed. Limitations of the study are delineated, and directions for future research are suggested.

CHAPTER II

THEORETICAL FRAMEWORK AND REVIEW OF THE LITERATURE

Since at lest the middle of the current century, there has been growing concern in North America that children do not benefit equally from our education systems. The argument behind early intervention efforts was that all children do not have equal cognitive skills when they enter school. Initially, it was felt that SES was the determining factor in this inequality, and considerable research effort was devoted to "proving" this hypothesis. However, differences in SES have not proven to be an adequate explanation of the factors contributing to children's being at risk for academic failure. More recently, attention has been directed at the quality of interactions and stimulations in the preschool environment.

This selective review of the literature will begin with an examination of some of the theories of child development, focusing on theories which acknowledge the importance of viewing the child as an active participant within a system. Some discussion will also centre on socioemotional development, since factors such as self-regulation and motivation to learning are as important to success in school as are cognitive skills. A brief discussion of how children may actually learn as a result of interactions with parents and their environment will also briefly examine cognitive strategies for learning and metacognitive awareness of the use of these strategies.

The major emphasis of this study is in determining the relationship between interactions and stimulation in the home and the child's socioemotional, self-concept and cognitive development. Following a discussion of research on SES differences, literature on the effects of home interactions and parenting style on child development will be delineated. A review of pertinent literature leads to an expectation that there will be differences in cognitive, self-concept and socioemotional development observed in children from different environments with different interactional patterns. However, there are some difficulties in assessing this development in young children which must be addressed. The second section of this literature review will examine issues in early identification and intervention.

A. Early Cognitive Development

The preschool years have been argued to be of vital importance for intellectual stimulation (Bloom, 1964;

Bruner, 1987; Wright, 1981). During these years, children are in the process of changing from being manipulators of concrete objects to becoming manipulators of relationships and complex ideas (Vygotsky, 1962). In addition, their play becomes more imaginative and their ability to comprehend representational things such as pictures and stories is evolving (Wright, 1981, 1983). It is also during these years that children develop basic numerical abilities such as one-to-one correspondence, ordinality, and concepts of quantity such as "most", "fewest", "greatest", and so forth (Flavell, 1985).

During the current century there have been a number of popular views of human development and intelligence which differ in important ways. The most significant point of disagreement has been the emphasis placed by each theory on the influence of heredity and/or environment in a child's development (Day, 1983). An examination of some basic themes in child development literature highlights the importance of the child's early environment on development. However, before beginning a discussion of areas of child development relevant to this study, it will be helpful to outline this researcher's definition of important terms.

1. Definition of Terms:

Discussions of development, whether this be conceptual, self-concept or socioemotional, run the risk of "becoming entangled in terminological confusion as well as unresolved controversies" (Schuler & Perez, 1987, p.2). In this study, the following definition of terms reflect the intent of the author:

a. Conceptual development: Conceptual development refers to those inductive cognitive processes or operations "whereby one comes to know symbolically the concept" (Reber, 1985, p.141). Concept development requires "both abstraction and generalization-the first to isolate the property, the second to recognize that it may be ascribed to several objects" (English & English, 1958, p.105).

b. Perceived interaction: Rating scales completed by parents (mothers) and teachers will be used in the current study. However, rating scales are really a measure of the rater's perception of the child's skills and/or socioemotional development (see p.9). Perceived interaction in the current study refers to the child's socioemotional development or interactional skills as perceived by the individual rating these.

c. Self-concept: Self-concept refers to an individual's internal representation of his/her own attributes (Reber, 1985).

d. Socioemotional development: Social competence is a complex concept involving cognitive, emotional and motivational factors (Wright, 1983). Socioemotional development refers to a set of social and emotional indicators which permit children to adapt nd interact effectively in the preschool, home or academic situation.

e. Socioeconomic status: Socioeconomic status (SES) is "a rating of the status of an individual's position in...society based on a variety of social (e.g., family background, social class, education of parents, education of self, values, occupations, etc.) and economic...indices" (Reber, 1985, p.711).

2. Theories of Development

Only three of the major categories of theories will be reviewed here. The first two of these categories will be briefly discussed because their lack of consideration of the child as a learner highlights the emphasis the third category places on child-environment interactions.

Theories which assert that development is predetermined by inherited characteristics and traits reflect the works of, for example, Gessell, Hall, and Terman. In reviewing these theories, DeVries (1987) used the metaphor of organic growth to express this view of development, where the environment contributed by providing the nourishment that triggered prepatterned stages. This very passive view of child development assumes that children develop by being children (Day, 1983; Weinstein, 1983), and has been an issue of some concern with professional educators in Canada (Biemiller, 1982).

Behavioristic theories of cognitive development (e.g., those of Watson and Skinner) view learned behavior as the basis of human development (Day, 1983). This viewpoint has been expressed in the metaphor of a machine in which there are inputs from the environment and outputs by the individual (DeVries, 1987). The individual is thought to learn as a direct consequence of positive and negative reinforcement, and the concept of will is given no significant role (Day, 1983; Schakel, 1986). However, as has been often noted, these theories do not adequately consider individual variability or internal motivation (Day, 1983; Kendler & Kendler, 1975; Lumsden, 1983).

A third viewpoint of development, transactionism (Day, 1983), constructionism, or cognitive-developmental, has been described in a metaphor of dialectic process (DeVries, 1987). Interaction or dialogue with increasingly complex social and physical environments by the internal psychological core is essential to the evolution of knowledge (Bronfenbrenner, 1974; DeVries, 1987; Haywood & Switzky, 1986a; Hunt, 1961; Ogbu, 1987; Reynolds, 1986; Sameroff & Chandler, 1975). Humans are born with the intellectual means by which to reinterpret and use sensory data; however, each individual is unique in the modification, reorganization, and interpretation of environmental sensations and perceptions (Day, 1983; Lumsden, 1983). Most theories of learning and development in current use are transactionist in nature (Sameroff, 1975; Wittrock, 1974).

This transactionist view of the nature of intelligence has recently been discussed at some length by other prominent researchers (Case, Hayward, Lewis & Hurst, 1988; Haywood & Switzky, 1986a, 1986b; Reynolds, 1986; Sternberg, 1984). These authors have contended that intelligent behavior is comprised of largely genetically determined native ability and largely acquired cognitive functions. These cognitive functions include operations, processes, principles and strategies as well as nonintellective variables such as motivation to learn, work habits, and attitude to learning. It has been argued that task-intrinsic motivation is one of the most important of the learned nonintellective variables. Furthermore, individual difference in this variable are strongly related to the differences in efficiency and efficacy of learning (Haywood & Switzky, 1986a; Haywood & Wachs, 1981; Switzky & Haywood, 1984). This being the case, children from homes which do not model and/or encourage these "achievement" variables may be at risk for later academic difficulty.

A transactionist/constructivist approach to chid development highlights the importance of the child's interactions with the environment to continuing cognitive development. The home environment is of particular importance during the child's early years because of the natural limitations of physical and cognitive development and the dependency on others for physical care, nurturance, and stimulation/interactions. Furthermore, this approach emphasizes the importance of early cognitive growth to later stages of development. The following section will review general aspects of stage development literature which are felt to highlight the importance of early interactions in cognitive development.

3. Stages of Development

Constructivist approaches to learning have been significantly influenced by Piaget (Bereiter, 1985). The basic assumption from cognitive developmental theory is that the level of complexity of cognitive and mental structures determines the level of human behavior (Thies-Sprinthall, 1984). For example, information processing theorists assume that adults and children possess the same cognitive processes, and that differences are in the efficiency of use of these processes (Schakel, 1986). However, Piaget argued that development is dynamic, and that the intellectual behavior of a preschooler is different from that of a preadolescent and different again from that of an adult. Vygotsky (1978) also noted change in the type of thinking evidenced at different age levels. He attributed this change to attempts by the individual to establish generalizations and rules. Each person used individual experiences to build intellectual complexity by constructing and reconstructing knowledge of the world. Furthermore, individuals construct things that are not taught (Day, 1983; DeVries, 1987) as a result of coordinated actions and/or reflective abstractions (Piaget, 1964, 1970a; Vygotsky, 1978).

Both Piaget and Vygotsky contended that development, although continuous, must proceed through fixed stages. Piaget argued that each stage is based on the ones that precede it, and that later operations are dependent upon organization of perceptions and experiences at the preoperational level. Although stages are age-related, chronological age is not necessarily indicative of the stage of development (Day, 1983). However, neo-Piagetian theorists have proposed that under certain circumstances, children can demonstrate cognitive competence beyond their apparent stage of development (Dansen, 1977) and that stages may not be invariant (Flavell, 1977). It has been argued that stages can be conceptualized as "hard" in the Piagetian sense, implying qualitative differences in structure, invariant sequencing, and hierarchical integrations, or as "soft", implying elements of affective and reflective cognition and personal characteristics (Kohlberg, 1984). However, the appearance of any one stage is as a result of interactions among internal need, experience and the demands of society (Day, 1983). In other words, the young child's construction of intelligence as an instrument of knowing crucially depends on physical action and interactions with people.

Piaget did not directly examine the impact of social interaction on development (Schuler & Perez, 1987). However, he did suggest that affectivity is essential in the working of intelligence, although it does not modify intelligence (Piaget, 1981). In recent years, neo-Piagetian theorists (e.g., Pascual-Leone & Goodman, 1979; Case et al., 1988) have proposed that affective growth both progresses in stages and is structured along with knowledge. For example, interest is essential to the spontaneous empirical and reflective abstraction necessary for the construction of knowledge and intelligence (DeVries, 987; Haywood & Switzky, 1986a). In other words, without interest, children would not assimilate experience to existing structures nd would make no accommodation to existing structures (DeVries, 1987). Interest is also seen as performing a regulatory function, for example, of controlling the energy spent on an object, person or event (DeVries, 1987). It can be argued that interest and sustained spontaneous activity necessarily stem from modelling and/or reinforcement of such behavior by important adults in the child's environment. Should this be the case, the child whose early interactions do not include such modelling and/or reinforcement may not be as quick to assimilate and accommodate new information and thus may become somewhat "delayed" in stage development.

There has been mention in this section of the interplay between cognitive and socioemotional or affective development. However, socioemotional development is a very essential factor in a discussion of children who may be at risk for academic difficulties. The next section will briefly review some aspects of socioemotional development which are relevant to the current study.

4. Socioemotional Development

Social cognition was defined by Flavell (1977) as "cognition of human objects and their doings. It includes perception, thinking nd knowledge regarding the self, other people, social relations, social organizations and institutions--in general, our human social world" (p.49). Socioemotional development, or the development of social interactional and affective skills, involves processes of attachment, self-identity, self-regulation and play, each of which has a significant role in the child's development of self-worth and self-concept (Bagnato & Neisworth, 1987). Just as the young child's understanding of the world begins with the manipulation of concretes, younger children tend to have a sense of self that encompasses the concrete, observable aspects such as behavior or physical attributes (Weinstein, 1983). A significant proportion of an individual's sense of self-worth develop through social modelling of behaviours that are valued and reinforced by those with whom the individual is interacting (Bandura, 1971). In other words, psychosocial growth can be viewed from a developmental perspective where socioemotional development and the formation of self-concept is affected by the quality of parenting (e.g., Erikson's [1950] stages of socioemotional development). As a result of the parenting process, children develop a sense of trust about their environment which is the basis for self-concept and for resolving other conflicts (Bagnato & Neisworth, 1987).

As was indicated earlier, socioemotional development is the child's increasing ability to adapt and interact effectively in his/her environment. It is a common assumption that young children cannot take the perspective of others since they have no conception of other selves (Bruner, 1987). For example, Piaget (1967) contended that the young child's egocentric thought, and inability to decenter and coordinate different points of view precluded the ability to cooperate. Piaget emphasized that social interaction is vital to the development of decentering, logic and reasoning, since the reactions of others to what the child says and does leads to his/her understanding of the importance of truth. Thus, the child who has not yet learned to decenter may not perceive any difficulty with statements that conform to what s/he wants, even though they are untrue (DeVries, 1987). When children begin to direct feelings at others, decentration of affect starts, and interest changes from the action of good feeling to the cause of the good feelings, the construction of others as permanent objects and the differentiation of cause and effect (DeVries, 1987). Thus, early social interactions which model and/or reinforce cooperation with adults and children are probably important precursors to the development of acceptable social situation.

Earlier it was stated that self-concept is the child's understanding of his/her own attributes and/or abilities. Unilateral respect generally arises as a result of the heteronomous relations that children have with parents. However, continued and pervasive adherence to the rules and values of others, particularly when the child's knowledge of the reasons for these is nonexistent, may be harmful to the child's developing self-concept (DeVries, 1987). In other words, when the child is not given opportunities for compromise and must consistently obey/meet parental rules/standards which are not understood, the child's self-concept may be poor. DeVries argued that a pattern such as this could result in passive social and intellectual conformity, a lack of motivation to question and analyze one's own beliefs, and a failure to build one's own reasons to conform to rules. Similarly, there has been some recent research which examines reinforcement of performance ("correctness") as opposed to mastery ("effort"). For example, Ames and Archer (1987) found that the mother's reinforcement of performance rather than mastery may result in the child avoiding challenging tasks in order to ensure ongoing reinforcement for correct performance of tasks where success is guaranteed. Furthermore, it has been suggested that such an emphasis on performance may lead to a feeling of helplessness or external locus of control (Ames & Archer, 1987; Dweck, 1986). Concomitantly, exposing very young children to repeated situations of "negative appraisal" and failure to please can result in negative self-concept development (Caraway, 1986). Such experiences can also foster a belief that termination of this failure is beyond the individual's control (Torgesen & Licht, 1983). In contrast, exposure to positive statements and support regarding effort from significant others can have a positive effect on self-esteem (Whelan, Saman & Fortmeyer, 1984).

A sense of control or cause is considered to be a critical component of "self" (Weinstein, 1983). Although psychologists such as Vygotsky (1976) recognized the importance of language in self-regulation and organization of behavior, it is only recently that this function of language has received attention in North America (Schuler & Perez, 1987). It has been argued that at approximately four or five years of age, language and cognition become important factors in self-regulation (Luria, 1961). It is about this age that the requests and commands of caregivers become internalized to the point that covert self-talk can become self-regulatory (Schuler & Perez, 1987). In other words, the child masters social skills as a result of interactions with others. These skills are then internalized and, eventually, skills which were first used to influence others are used in self-regulation (Van der Veer & Valsiner, 1988).

Constructs such as "learned helplessness" (Torgesen & Licht, 1983), and self-responsibility for school learning (Wang, 1982) appear to be closely related to learning processes and outcomes (Weinstein, 1983). A positive self-concept is an important factor in both the formulation of children's understanding of the need for them to be active participants in the learning process and the understanding that they are capable of doing so (Anderson & Adams, 1985; Dweck, 1986; Lochel, 1983). However, a positive self-concept and the ability to self-regulate behavior are also important factors in the development of appropriate and acceptable social skills.

Problems of antisocial behavior in children tend to be stable over time and to be related to academic failure, poor social relationships and poor self-esteem (Patterson, 1986). These children are often difficult to teach because their lack of compliance and self-control impedes learning (Patterson, 1986; Patterson, DeBaryshe & Ramsey, 1989). There is a growing body of evidence that the parents of antisocial children are lacking in family management and interaction skills with the result that antisocial behavior is learned/taught in family interactions (Kazdin, 1987; Patterson, 1986; Patterson et al., 1989; Pettit, Dodge & Brown, 1988). In other words, when parents do not effectively stop general coercive behavior and establish compliance, they set in motion interaction sequences that train aggression. Generally, antisocial children come from families where discipline is harsh and inconsistent, where positive parent involvement with the child is lacking, and where the child's activities are poorly monitored and/or supervised (Patterson et al., 1989). Results of recent studies indicate that younger mothers have more difficulty in setting limits and with disciplining than do older mothers (Coll, Hoffman & Oh, 1987; Hartup, 1989; Whitman, Borkowski, Shellenback & Nath, 1987). The children of these mothers may be at greater risk when they enter school because of their poor social skills and lack of compliance.

The preceding sections have repeatedly emphasized the effect, both positive and negative, which parent-child interactions have on development. It is felt that an examination of possible ways that children actually construct social and conceptual knowledge will emphasize even further the importance of early experiences that involve stimulating events, materials and interactions with caregivers.

5. How Children Learn

As was indicated previously, a belief that cognitive knowledge is constructed in an active manner is central to most contemporary approaches to learning (Wittrock, 1974). The importance of the child's active participation in the learning process, and the importance of this active participation on the development of an internal locus of control has been emphasized repeatedly (Feuerstein, 1979, 1980; Meichenbaum, 1977; Mulcahy, Marfo, Peat & Andrews, 1987). In other words, by being an active participant in her/his own construction of knowledge, the child learns that s/he is in control of how and what learning takes place.

It has been argued that constructivism, including that embedded in information-processing models, while having intuitive appeal and empirical support, is "weak" theoretically (Bereiter, 1985). In other words, no theory adequately accounts for the organization of newly formed concepts and for the acquisition of more complex procedures (Bereiter, 1985; Lockart, 1982; Norman, 1980). This problem has been referred to as the "learning paradox" (Pascual-Leone, 1980). That is, in order to account for learning through the learner's mental actions, it is necessary to ascribe to the learner previous cognitive structure as complex as the one being acquired (Bereiter, 1985).

Bereiter (1985) suggested possible methods by which what he termed "bootstrapping" can occur, i.e., the development of more complex skills without some ladder upon which to climb. The techniques Bereiter described emphasize the importance of early interactions in the learning process. For example, the child will be more likely to recognize a "success" when it is reinforced by an adult. Similarly, in order to imitate appropriate learning/thinking behavior, the child must have an appropriate model of the behavior and the opportunity to interact with this model. Likewise, the development of a coherent self-concept is dependent upon an environment which is consistent and which encompasses positive, supportive interactions.

The internal processes whereby the child controls cognitive behavior and the construction of knowledge have been referred to as cognitive strategies (Gagne, 1977). Cognitive strategies can be thought of as content-free tools which enable more effective and efficient acquisition, retention and application of new knowledge (Mulcahy et al., 1987). One of the important factors in the development of strategies would seem to be verbal interactions with an adult which encourage thinking and conceptual manipulation. It has been suggested that age-related differences in performance on cognitive tasks is the result of available mediators (strategies) not being sufficient to guide ongoing behavior in younger children, i.e., a mediational deficiency (Reese, 1962). Subsequently, it was suggested that younger children possess but fail to use appropriate information processing strategies, i.e., a production deficiency (Flavell, Beach & Chinsky, 1966). As support for the latter contention, it has been demonstrated that younger children can be taught to use appropriate strategies which are used spontaneously by older children (Keeney, Cannizo, & Flavell, 1967). Regardless of whether young children have a mediation or a production deficiency, cognitive strategies eventually develop as a result of adult-child interactions and the child's imitation of appropriate cognitive strategy use by an adult. In addition, since learning and memory are very much affected by what is already known (Siegler, 1983) and by learning structures (Chi & Rees, 1983), a more stimulating environment will likely produce greater cognitive development, including strategies.

Metacognition, one's awareness of one's systematic use of strategies in learning, has been argued to involve and combine many areas of development which have traditionally been thought to be separate. These areas include fear of failure, need for achievement, perception of internal/external locus of control, learned helplessness, and level of aspiration (Brown, 1978). It has been suggested that older children who have difficulty in problem solving tasks have not developed mediational or metacognitive skills (Brown, 1978; Flavell, 1977; Meichenbaum, 1977). From the previous discussions the assumption can be made that early parent-child interactions may play a vital role in the development of metacognitive skills. For example, a child may not have had experiences which foster the development of a feeling of self-control over learning activities, and thus may feel and act helpless when faced with a new learning task. Children whose early interactions with adults have fostered feelings of helplessness and/or fear of failure and/or which have not encouraged inquiry, aspiration and achievement may be at particular risk for later difficulties in problem solving situations.

As was indicated in the introduction to this chapter, SES was long considered to be the major contributing factor to children's level of cognitive development. The following section will examine some of the related literature; however, the discussion will also emphasize that it is the correlates of poverty which are of the most significance in child development.

6. Child Development and Socioeconomic Status

There is a body of literature from a number of countries reporting high and significant correlations between/among children's scores on intelligence tests, academic achievement, and parental social class or socioeconomic status (SES) (Anastasi, 1968; Barnes, 1982; Golden & Birns, 1976; Haywood & Switzky, 1986a; Jencks, 1972; Ramey & Campbell, 1979; Ramey & Finkelstein,1981; Ramey, McPhee & Yeates, 1982; Scarr & Arnet, 1987;

Walker, 1985; Wright, 1980a, 1981, 1983; Zigler & Berman, 1983). Similar correlations have also been found for children who have been adopted (Duyme, 1988; Teasdale & Sorenson, 1983). In fact, a comprehensive review of the research and literature has led to the suggestion that socioeconomic factors are significantly more important in predicting the cognitive development of a child than are factors such as early birth trauma (Sameroff & Chandler, 1985).

There is only limited knowledge regarding psychological conditions in low SES homes, and it is recognized that these homes/conditions vary widely. It has been suggested that lower SES parents are often tired, worried, discourage, frustrated and/or in distress (Wright, 1980a, 1980b). It has also been argued that it is the effects of poverty on parents (e.g., marital conflict, alcoholism and violence) which directly or indirectly damage children (McLoyd, 1989; Wright, 1983). For example, families in distress are often characterized by higher levels of negative social stimulation, negative and/or coercive reinforcement loops, feelings of helplessness, and negative feelings, thoughts and perceptions of other members of the family (Kazdin, 1987; McLoyd, 1989; Wilson, 1986). Emotional abuse is often associated with poverty and unemployment as well as with other family factors such as stress and tension (Nesbit

& Karagianis, 1987). This type of abuse can foster the erosion of development, blunted emotions, a feeling of a lack of control over one's life, and a lack of confidence in one's own judgment (Helfer, 1981; Nesbit & Karagianis, 1987). These correlates of poverty may be of some significance in the small city in which this study was conducted. In a 1986 survey of average incomes, this city ranked 99th out of 100 Canadian cities of equal or larger size (CP-Staff, Standard-Freeholder, December 14, 1988).

It has been suggested that low SES parents spend less time interacting verbally with their children, particularly in conversations that encourage thinking and conceptual manipulation (Wright, 1983). Wright also claimed that low income parents tend to use shorter sentences to communicate, and to discourage attempts at inquiry which they find threatening. Low SES parents are more likely to verbalize about the here and now rather than to engage in verbal interaction which requires children to learn and abstract concepts such as colour, shape or size of objects, and/or position in space of objects in relation to self or other objects (Hunt, 1972). It is possible that lower SES children do not have the opportunities for modelling purposeful behavior or the "enduring patterns of reciprocal contingent interactions" (Bronfenbrenner, 1974, p.31) with significant adults that are thought to be necessary for active cognitive development. These deficiencies may alone, or in combination, contribute significant "hazards to development" (Marjoribanks, 1979).

In addition to scoring lower on intelligence and achievement tests, low SES children, and in particular boys, frequently are found to be more impulsive and disruptive than their middle SES peers (Cohen, 1970; Coyle, 1967; Messer, 1976, Walker, 1985). Research results have suggested that children who have been labelled cognitively impulsive tend to do less well on cognitive and intelligence tests because of a "hasty, nonreflective" response style involving significantly less information processing (Cohen, 1970; Walker, 1981; Wright, 1983). This response style may be a result of not having learned to extract information from the environment (Willerman, 1979). In other words, impulsive children may not have learned to select and use cognitive strategies which are appropriate for the task at hand (Douglas, 1972).

Children from lower SES levels also tend to display more maladaptive social behavior then do their more advantaged peers (Wright, 1983). Conceptualizations of problem behavior from family systems theory indicate that interactions within the family are factors in the etiology of such behavior in children (e.g., Conger, 1981; Forehand & McMahon, 1981; Kazdin, 1987; Patterson, 1980, 1986). It has been suggested that the experiential and developmental factors which affect the evolution of problems in parent-child relationships are in place before six years of age (Forehand & McMahon, 1981).

Factors such as those discussed above do support a relationship between cognitive/academic and social problems and SES level. However, socioeconomic status rarely accounts for more than 25% of the variance in achievement and IQ measures (Bloom, 1964; Henderson, 1981). Thus, it has been argued that poverty, in and of itself, may not have a detrimental effect on children if parents are relatively competent and family structure is relatively stable (Wright, 1983). In addition, if parental aspiration is to "get ahead", there may be more interest in education than if parents are engaged in maintaining the status quo (Kahl, 1953). The significant factor of SES in child development may be the effect of poverty on parents and the parent-child relationship (Wright, 1983). In other words, despite the superficial similarity of characteristics within different subgroups of individuals, one cannot attempt universality in definition of these groups as, for example, "the poor" (Garber, 1981).

The cognitive competence of children has been found to be highly correlated with factors such as maternal IQ and educational level (Alberman, 1973; Ramey & Campbell, 1979; Spreen, 1979; Wach & Gruen, 1982; Werner & Smith, 1977). It has also been found to be related to parent practices of child-rearing and responsiveness, to the type and degree of stimulation, and to parent styles of teaching and interacting (Alberman, 1973; Bradley & Caldwell, 1976; Ramey, Farren & Campbell, 1979; Schaefer, 1987; Schaefer & Edgerton, 1985; Spreen, 1979; Werner & Smith, 1977). There is a relationship between single parent families and difficulties in school achievement, particularly when the mother is young and unmarried (Brooks-Gunn & Furstenberg, 1987; Hartup, 1989; Ramey & Campbell, 1987; Vinovskis, 1981; Wallis, 1985; Washington & Oyemade, 1985, 1987; Wright, 1983). Thus, the growing number of single mothers and the feminization of poverty are issues of considerable concern (Coll et al., 1987; Washington & Oyemade, 1987).

Early intervention or "compensatory" programs (e.g., Head Start) were designed to "remediate the deficits" that lower SES children were presumed to have in order that they could begin school on an equal basis with their more advantaged peers (Day, 1983). However, there is variation in homes across socioeconomic levels in the provision of resources for conceptual development such as toys, books, imaginative play and problem solving (Brooks-Gunn & Furstenberg, 1987; Henderson, 1981;

Willerman, 1979; Wright, 1983; Zigler & Freedman, 1987). Consequently, it has been argued that a measure of experiences, stimulation, and types of interactions provided in the home environment may be a more valid predictor of the need for intervention than is an index of socioeconomic status (Caldwell & Bradley, 1978; Henderson, 1981). The next section will delineate some of the important aspects of parent-child interactions in the home to child development.

7. Parenting and Development

Ramey et al. (1982) defined developmental retardation "in terms of deficits in intellectual functioning and adaptive behavior that occur in the course of ontogeny" (p.67), and "as any significant impairment in ecologically valid assessments of cognitive and adaptive functioning which is known to be preventable" (p.68). These authors acknowledged the strong relationship between social class and developmental or psychosocial retardation; however, they also indicated that the greatest percentage of lower SES children cannot be considered to be retarded. Thus, they pointed out, there is a need to identify which types of parents and/or parenting skills will lead to less than optimum development of children.

It is only recently that interest has been expressed in the importance of early social interactions on later social and cognitive development, despite the emphasis on sociogenesis by psychologists such as Vygotsky (Van der Veer & Valsiner, 1988). For example, Bradley and Caldwell (1976, 1980) found a strong relationship between specific aspects of children's home environment and langauge and cognitive competence through the age of five. There was a moderate relationship between early home environment and the academic competence of these children in the primary school years (Bradley & Caldwell, 1984). In a later study, Bradley, Caldwell and Rock (1988) found that even at the 10 year old level, there were still some moderate correlations between early environment, academic achievement, and appropriate social behavior. However, at the 10 year old level, the strongest relationships were between achievement/behavior measures and the child's contemporary environment.

Factors associated with less than optimal parenting skills include poor pre- and postnatal health care, with possible negative effects on both mother and child; a lack of and/or inappropriate parent-child interaction; failure to implement strategies which would stimulate langauge development; a lack of awareness of normative child development; and poor understanding of the need for stimulating play materials including pictures, books and other representational materials (Washington & Oyemede, 1987; Whitman et al., 1987). Other factors possibly contributing to less than optimal child development include a lack of parent perception of the importance of reading to children and of playing pretend games or engaging in other imaginative activities. Parents may also not be aware of the importance of modelling achievement, self-esteem, self-confidence, and perceived locus of control (Wright, 1981; 1983).

It has already been mentioned that maternal educational level is an important correlate of children's cognitive competence. The importance of education and an awareness of normal child development is particularly emphasized for adolescent mothers (Whitman et al., 1987). Recent evidence (Coll et al., 1987; Wadsworth, 1986) would indicate that children of adolescent mothers may be at particular risk for academic and social difficulties, since these mothers may be less responsive, involved and verbal with their infants than are nonadolescent mothers. Teenage mothers also tend to underestimate the cognitive abilities of their infants (Miller, 1988). In other words, although adolescent mothers are more likely to be low SES school dropouts, differences between them and nonadolescent mothers are essentially in maternal behaviours rather then in physical properties within the environment. Thus, as has been suggested by, for example, Adibin (1983) and Elardo and Bradley (1981), maternal educational level may be an important predictor of children's cognitive competence.

It has been suggested that parents reflect their beliefs about cognitive development in their treatment of, and interaction with, their children (Miller, 1988). For example, Palacios (1986, as cited by Goodnow [1988]) found that traditional parents, who ended to have "lower" education, gave little consideration to the importance of interaction with their children. These parents place the emphasis of development on heredity, feeling that their input was of little influence or importance. They also tended to be in favour of coercion in educational practice. Modern parents, characterized as having a "high" level of education, considered interactions to be far more influential in developmental outcomes than is heredity, and tended to feel they were very influential in developmental outcomes. Paradoxical parents, with a "middle level of education", tended to derive their ideas of parenting from erratic experiences, resulting in a mixture of stereotypical and radical ideas of parenting. Other research has also indicated a substantial correlation between parental modernity and education (Schaefer, 1987; Schaefer & Edgerton, 1985; Turnbull, Summers & Brotherson, 1986). Concomitantly, Stevens (1984) found that parents who were aware of the importance of their own behavior and of the stimulation provide by the physical environment were more supportive of concept development. Similarly, parents who were more knowledgeable about normative child development were more likely to be emotionally supportive and responsive.

A child is not a passive imitator of adult behavior; rather, the child tries to understand the environment by testing hypotheses and integrating results into his/her already existing body of knowledge (Van der Veer & Valsiner, 1988). This being the case, the child's environment has the potential for minimizing or maximizing early development since the child's developing awareness of cause-effect relations stems from interactions with his/her caregivers (Sameroff & Chandler, 1985). As the child develops, s/he learns to differentiate between events which are causally related and those which are not (Rotter, 1966). If the child's experiences are erratic or are incongruous with the development of a sense of security and efficacy, the child may develop a sense of helplessness (Schuler & Perez, 1987) or powerlessness (Rotter, 1966). However, adult responses which are contingent upon the child's behavior and which acknowledge, elaborate, imitate or provide consequences teach the child that his/her actions result in an effect (Schuler & Perez, 1987). It is this type of contingent adult response that Watson (1966) contended was instrumental to early cognitive development.

There seems to be a strong relationship between parental verbal interaction and teaching and the development of competence in children (Petit et al., 1988; Sigman, Neumann, Carter, Cattle, DeSouza & Bwibo, 1988). Throughout the child's growth, the verbal interpretation and utterances by caregivers tend to shift to accommodate the child's enlarging repertoire of behaviours (Snow, 1986). In other words, the caregiver provides the child with the language to describe behavior. Often children who have difficulty in school do not seem to have developed the ability to think in symbolic form (Hunt, 1972; Sigel, 1971). These children may come from homes which lack the stimulating conversation that encourages the manipulation of ideas (Hunt, 1972) or which encourage verbal interaction. Some children entering school may have difficulty developing attentiveness to human voices or sensory stimulation because of a lack of regular routines, or an excess of noise and confusion in their primary environment (Deutsch, 1964). In contrast, it has been found that parenting techniques which involved positive communication and support regarding the child's academic effort resulted in increased self-concept and achievement (Scheirer & Kraut, 1979). Thus, parental verbal interactions which foster and encourage intellectual "stretching" may be vital factors in both the cognitive and the socioemotional development of the child.

8. Summary

Before continuing on to a discussion of some of the difficulties in assessing cognitive, self-concept and socioemotional development in young children, it may be helpful to summarize the literature reviewed thus far. The discussions in the previous sections consistently indicated that conceptual, self-concept and socioemotional skills are weaker and/or slower to develop in children from environments characterized by a lack of parent-child interaction or by interactions which are inappropriate or of poor quality. Therefore, this study will examine differences in the level of conceptual, socioemotional and self-concept development in children from homes with different levels of stimulation and interaction.

There is a growing tendency to view the family, and the child within the family, from a systems theory framework. The basic principles of systems theory are that systems are interactional such that individuals within the system are interdependent and that system patterns are circular rather than linear (Minuchin, 1985). Accordingly, social, emotional and/or physical problems in the preschooler's development may interact with parent behaviours to produce additional problems (Wilson, 1986). In other words, the child's behavior is affected by the environment, but, in turn, also influences the environment (Bandura, 1971). In addition, the child's behavior in one setting may not predict that child's behavior in another situation/setting because of the possible different interactions/factors involved (Foster & Cone, 1980). Another area to be investigated by this study is whether the perceived interactions (see p.9) between the parent and the child and between the teacher and the child are different for children from homes with different levels of stimulation and interaction.

A significant body of literature points to the high correlation between socioeconomic status and cognitive development, academic achievement, and social/adaptive skills. However, more recent emphasis has been placed on the importance of the interactions within the child's environment on subsequent development in intellectual, self-concept and social areas. It is probably that the conditions which result in/from poverty may contribute to poor parenting practises. However, poor parenting skills are also likely to be found across the socioeconomic strata. A final question to be explored in the current study is whether there is, in fact, a relationship between SES and the type and degree of home interactions. In order to ensure a lack of bias, the question of possible differences in home interactions in terms of the sex of the child will also be explored.

The questions examined in this study will quite possibly lead to the discovery that a percentage of the children involved may be at risk for future academic and/or socioemotional difficulties. Therefore, the following sections examine relevant issues in the areas of early identification of and intervention with children at risk.

B. Early Identification and Intervention

The current study was not designed as a needs assessment of children who are possibly at risk for either academic failure or social/behavioral problems. Rather, it was a study of the relationships between different levels of home stimulation and interaction nd cognitive and socioemotional development of a junior kindergarten sample in a small city in eastern Ontario. However, one desired outcome of the study was that the results would be of some use to local educators planning early intervention at the day care or junior kindergarten level. Thus, in order to interpret the results of the current study in terms of what research in the area has already shown, a brief discussion of some of the issues in early intervention is in order.

Superficial similarity of developmental processes in different subgroups of individuals has often led to attempts at universality in definition of these groups (Garber, 1981). However, one has only to look at the results of early intervention programs to get some indication that groups were not equal (e.g., Garber & Hebert, 1981; Seitz, Apfel & Rosenbaum, 1981). Most of the published research on early identification comes from the United States. However, the argument has been put forth that young Canadian children at risk for academic failure may be different from those in the United States (Wright, 1983). Certainly, in planning early intervention, there is a strong argument for assessment of the needs of the child within the local social context of family, school and society (Ramey et al., 1982; Whitman et al., 1987; Woodhead, 1985).

1. Early Identification.

There has been growing interest in the early identification of children who are likely to be at risk for learning problems later in their academic year (Clark & Villano, 1987; Hodder et al., 1986; Lindsay & Wedell, 1982; Scarborough, 1989; Simner, 1986, 1989; Tramontana, Hooper & Selzer, 1988). However, while the value of early identification is recognized, there has been some caution against identification for the purpose of labelling (Leigh, 1983; Tramontana et al., 1988). Early identification is of no use unless it is followed within a reasonable period of time by some type of intervention. Thus, identification should ask questions which are easily translated into intervention (Leigh, 1983).

Many aspects of development correlate with later learning difficulties. The difficulty for educators is in determining which aspects of development are causally related to academic failure (Clark & Villano, 1987; Lindsay & Wedell, 1982). Many preschool screening instruments give the impression that the skills assessed actually predict later academic success. However, different instruments place different emphasis on various skills and few measures indicate critical levels of competence (Lindsay & Wedell, 1982).

Most preschool screening instrument tend to focus on the development of language, auditory and visual skills, gross and fine motor skills, perceptual motor skills and letter recognition (Lindsay & Wedell, 1982). These areas are considered to relate to the development of academic skills such as reading. However, Simner (1983), in a review of 18 research articles, found that many of these "warning signs" had correlations that were inconsistent and generally at a low magnitude (e.g., Ireton, Sing-

Lun & Kampen, 1981; Lindquist, 1982). Simner argued that gross or fine motor coordination (also, Tramontana et al., 1988), peer acceptance or adult cooperation, basic language skills, and drawing and copying errors were poor warning signs. In contrast, general categories of skills identified by Simner as possibly being effective warning signs included in-class attention span (also, Tramontana et al., 1988), distractibility or memory span, in-class verbal fluency, in-class interest and participation, letter or number identification skills (also, Scarborough, 1989; Tramontana et al., 1988), and printing errors. Subsequent research involved in the standardization and validation of the Teacher's School Readiness Inventory (Simner, 1986) would tend to support these skills as significant indicators of school readiness.

Tramontana et al. (1988), in a multivariate review of 74 investigations, concluded that there seems to be "no single measure nor set of measures that invariably" (p.137) will predict a child's academic career. Rather, factors such as demographic characteristics of the children, age at the time of testing, and what, when and how criteria measures were assessed tend to vary predictive relationships. In other words, it is possible that children's resources in the environment can compensate for deficiencies. Accepting the probable truth of this statement points to the importance of early intervention.

Traditionally, there have been significant difficulties in the psychological/intellectual assessment of young children. The tools chosen to answer the questions posed in the current study derive from psychometric sources. Therefore, the following sections contain a brief discussion of some of the issues which are relevant to the type of assessment tools used.

(a) Problems in preschool assessment. There has been considerable advancement in the assessment of young children since the time tests yielded a global score generally used to diagnose mental deficiency (Paget & Nagle, 1986). For example, preschool screening of all children is now a commonly accepted practise (Hodder et al., 1986). This type of assessment involves the use of number of observations and procedures in order to identify children who, for a variety of social, intellectual, emotional, linguistic and/or environmental reasons, may be at-risk and who may require special programs in order to meet their potential (Barnes, 1982). There has been a considerable amount of literature reporting on early predictors of later academic achievement (Horn & Packard, 1985). However, it has been argued that many of the numerous preschool assessment devices do not assess the preschool child's development of the skills needed to "survive" in the next environment, i.e., kindergarten (Horn & Packard, 1985; McCormick & Kawate, 1982).

There is a growing awareness of the need to take a transactional or ecological approach to the assessment of preschool children in order to ensure that information is comprehensive, specific to the situations in which the child engages, and relevant to the specific child (Lewis, 1980; Martin, 1986; Paget & Nagle, 1986; Sameroff, 1974; Zigler & Freedman, 1987). Unfortunately, most of the formal assessment techniques and tools for use with preschool children were not developed from an ecological viewpoint (Schakel, 1986). Many instruments stem from a psychometric basis and reflect the assumption that cognitive ability is fairly static (Garwood, 1983). Most instruments also assume that all children of any given age have had equal experiential exposure (Paget & Nagle, 1986; Schakel, 1986) to what has been termed "middle-class milieu" (Ogbu, 1987). In addition, many techniques do not reflect the qualitative differences in thinking in preschoolers as opposed to older children and do not allow for differences across time and settings (Paget & Nagle, 1986). Thus, for example, it has been argued that individual assessment, particularly at the preschool level, may introduce errors of situational variance since the conditions for performance differ so markedly from those of the classroom (Adelman & Feshbach, 1971; Feshbach, Adelman & Fuller, 1977).

A number of issues have impact on the reliability and validity of preschool assessment procedures, including developmental change, fluctuations in behavior, emerging skills, and variables relating to the situation (Paget & Nagle, 1986). These lower estimates of stability across time and settings necessitate at least an awareness of the reliability and validity data on the instruments intended for use with any child (Barnes, 1982; Paget & Nagle, 1986). Most preschool screening tests do not have Canadian or American national norms. Rather, their norming samples are obtained from relatively restricted geographic area(s) (Thorpe & Werner, 1974). In addition, norming samples often reflect restricted populations in terms of factors such as socioeconomic level of the parents (Barnes, 1982). There is also considerable variability of correlation among different measures in terms of what is actually measured (Barnes, 1982; Caldwell & Drachman, 1964; Frankenberg & Camp, 1977).

There are other difficulties in the assessment of preschoolers, e.g., their limited ability to understand written and verbal instructions and stimuli, and the difficulty in conducting interviews with them as a result of their limited vocabulary and level of conceptual development. Preschool children may also have a tendency to confuse sequence and time, to confuse reality with wishful thinking, and to give events different weights than do adults (Palmer, 1983). In addition, young children often do not understand the demands of the assessment situation and, therefore, their behavior is often controlled by conditions such as fatigue, boredom, and/or separation anxiety (Martin, 1986).

Possibly a result of these and other difficulties, very few studies have investigated the relationships between preschool children's self-concept and the processes of the home environment, or between self-concept and academic achievement (Forehand & McMahon, 1981; Hansford & Hattie, 1982; Wilson, 1985). However, the need for examining the child's social/affective status, particularly in a transactional approach (Zigler & Trickett, 1978) has often been noted (Abidin, 1983; Elardo & Bradley, 1981; Forehand & McMahon, 1981; Wilson, 1986).

It is currently recommended that, for a preschool sample, assessment design include multiple measures and multiple sources of data over a period of time (to control for temporal variance), and that these measures be multidimensional (Bagnato & Neisworth, 1985a; Brooks-Gunn & Lewis, 1981; Martin, 1986; Neisworth & Bagnato, 1986; Paget & Nagle, 1986). The following sections will briefly review some salient points and areas of concern in this type of assessment of preschoolers.

(b) Assessment of the home environment. It has been argued that adverse environments and lack of experiences which would facilitate performance do not have the effect of either destroying or suppressing intelligence; rather, they inhibit the intelligent use and application of intelligence (Haywood & Switzky, 1986b). Since research would indicate that a child's environment can either reduce or amplify his/her cognitive, psychological and social difficulties, an assessment of the characteristics of the child's home environment should be an important factor in the overall assessment design. Measures taken should include factors such as educational, occupational and employment status of the parents (Adibin, 1983; Barnes, 1982; Brooks-Gunn & Furstenberg, 1987; Elardo & Bradley, 1981).

(c) Behavioral rating scales. Interviewing, usually of the parents and/or the teacher, is possibly the most widely used method of gathering information about the preschool child (Martin, 1986). Martin also noted that although the child is also interviewed at times, a number of authorities on assessment do not feel that interviewing a chid under the age of six years provides useful information. Research has indicated that ratings by both parents and teachers regarding the current developmental, behavioral and temperamental status of a child are both reliable (Hicks, Johansson, Heinze & Halscott, 1981; Paget & Nagle, 1986), and in close agreement with assessments by professionals (Bagnato & Neisworth, 1985b; Blacher-Dixon & Simeonson, 1981; Martin, 1986).

Parents would seem to be an obvious data source in screening of preschool children. However, there is some indication that parents are less reliable raters when they are asked to interpret rather than to report the existence or nonexistence of particular behaviours (Barnes, 1982). Since structure adds reliability to an interview (Martin, 1986; Wiens, 1976), there is probably some efficacy in the use of behavior rating scales in a parent interview situation (Barnes, 1982; Capute & Biehl, 1973; Colligan, 1976; Knobloch, Stevens, Malone, Ellison & Risemberg, 1979; Martin, 1986). It has been noted that some parents may exaggerate or under-identify symptoms for reasons relating to their own beliefs or needs (Barnes, 1982; Palmer, 1983). Thus, ratings are more likely to be valid if the parent is made to feel like a partner in the process of problem-solving (Martin, 1986). However, the problems of rater variance, related to individual differences in tolerance and expectations, setting variance, related to the variability in a child's behavior across settings, and temporal variance must be kept in mind (Martin, 1986). Measurement error can be reduced by using two different tools to measure the same characteristics (Martin, 1986; Thies-Sprinthall, 1984).

Theory-based behavioral and developmental checklists were developed in an attempt to help to determine a specific child's repertoire of behaviours in developmental and socioemotional areas (Schakel, 1986). At the preschool level, these checklists typically encompass many activities which are taught at home with little regard for formal instruction, structured settings or standardized curricula (Barnes, 1982). Typical rating scales used with preschool children are fairly inexpensive and require approximately 20 minutes to administer and ten minutes to score (Martin, 1986).

It has been noted that when people are asked to rate either others or themselves, they become the evaluating instrument (Jackson & Paunonen, 1980). Despite this knowledge, a large number of the currently used behavioral rating scales were not constructed on "model of the rater" basis (Cadwell & Jenkins, 1986; Cooper, 1981; Feldman, 1981). In other words, rating scales tend to be constructed as measures of raters' perceptual and cognitive skills rather than as measures of student characteristics, although they are assumed to measure the latter (Cadwell & Jenkins, 1986). To explain, consider the burden on the rater's information-processing abilities necessitated by the completion of behavior ratings (Feldman, 1981). The rater must recall specific behaviours of specific children and combine these into prevalence patterns distinct from prevalence patterns in other behavioral areas (Cadwell & Jenkins, 1986). Cadwell and Jenkins discussed a social cognitive model of the cognitive processes required to complete behavior rating scales. In this model, the authors proposed that, in order to meet the demands of the task, raters must rely on heuristic strategies which can result in systematic errors. For example, events which are easily recalled may be thought to have occurred more frequently than they did. Raters can also be influenced by their organization in semantic memory wherein semantically similar words describing behavior can be recalled as covariants as a result of closeness in meaning. Cadwell and Jenkins suggested that when asked to rate behavior, raters form a cognitive representation of the to-be-rated individual. This representation can be a generalized impression or quite detailed and specific. The raters then compare this representation with the items on the scale. Cadwell and Jenkins contended that the inability to perceive and recall all behavioral details results in raters relying on their own perceptions of the nature and organization of behavior. Thus, behaviours that are felt likely to co-occur are also likely to be rated similarly. Raters also tend to want to provide consistency and, as a consequence, rating of later items may be influenced by ratings of earlier items. Thus, although rating scales can provide valuable information about how parents and teachers perceive students, they are measures of the perceptions of the rater, not direct measures of student behavior. As such, rating scales can thus often tell us as much about the rater as about the person being rated (Cadwell & Jenkins, 1986).

Behavior rating scales are often used to assess adaptive functioning and communication development; however, they are also being used to assess socioemotional development, particularly with young children.

(d) Assessing socioemotional development. Although variables such as intelligence and communication are clearly related to academic achievement, factors such as self-concept and the ability to relate to the social demands of the academic situation are equally important (Shavelson & Bolus, 1982). This relationship was clearly recognized by many early intervention programs which frequently encompassed some emphasis on the development of socioemotional skills (Garber & Heber, 1981; Haywood, Brooks & Burns, 1987).

Self-regulation, or lack of impulsivity, is one subcomponent of socioemotional development which has received considerable attention in social learning theory (Bandura, 1977, 1982). The development of self-regulation seems to begin during the second year of life (Kopp, 1982) and shows great progress during the third year of life (Flavell, 1985). It has been discussed in relation to both motivation for learning and the development of "learned helplessness" or passivity in learning (Mischel, 1981; Zimmerman, 1983).

Impulsive children do not function as well academically as do more reflective children (Lidz, 1987; Wright, 1983). Current research has indicated that reflective children acquire, maintain and generalize strategies better than do impulsive children (Lidz, 1987). This may be because reflective children already possess more well developed, self-mediated regulation skills. A recent meta-analysis of the literature on screening at the kindergarten level has suggested that attention/distractibility, along with internalized behavior problems, and language variables, are the best predictors of early school achievement Horn & Packard, 1985). Thus, there may be some efficacy in assessing the development of self-regulatory behavior in the preschool child thought to be at risk (Lidz, 1987; Messer, 1976).

Increasingly, it has been argued that thinking, feeling and action must be examined not as separate, but as related processes (Bruner, 1987; Case et al., 1988; Pascual-Leone & Goodman, 1979). Thus, in evaluating preschool children's development, it is also critical to evaluate their self-concept and socioemotional skills (Biemiller, 1982). Interest in assessing the social and emotional skills of preschool children is a fairly recent phenomenon, probably related to the downward extension of schooling to the "preschool" level (Kelley & Surbeck, 1983; Martin, 1986). Despite the recency of interest in the development of preschoolers' self-concept or perception of self, there is a fairly large amount of research in the area (Broughton, 1978; Nicholls, 1978; Parsons & Ruble, 1977; Ruble & Rholes, 1981; Shavelson & Bolus, 1982; Shavelson, Hubner & Stanton, 1976; Weinstein, 1983; Yussen & Kane, 1980).

The purpose of early identification is to ask questions which can be translated into intervention (Leigh, 1983). The following section will discuss some aspects of early intervention which are of relevance to this study.

2. Early Intervention

It has been argued that the first five years of life are the most crucial to a child's development (Leigh, 1983). Evidence pointing to the importance of nursery school in the cognitive development of underprivileged children has existed since the late 1930's (Burchinal, Lee & Ramey, 1989; Wright, 1983). Recent evidence has indicated that there may also be advantages to preschool attendance for children from low-risk educationally advantaged families (Larsen & Robinson, 1989).

The American intervention/compensatory education efforts of the 1950's and 1960's were based, in general terms, on a model of deficiency which "explained" the problems of low SES children (Day, 1983; Zigler & Berman, 1983). These programs generally did not consider interactions between home and culture which impinge on the middle-class child (Evans, 1981; Lee, Brooks-Gunn & Schnur, 1988. In addition, possibly reflecting the behavioristic zeitgeist of the times, many programs appeared to be based on the chimera that all children can develop average intelligence as measured by our current IQ tests (Evans, 1981; Garber, 1981). Medically oriented models such as this assumed that these interventions could "inoculate" the child against future deprivation and supposed a single relationship between environmental deprivation and academic failure (Sameroff, 1979). Thus, the needs of lower SES individuals were not adequately identified in many early studies (Baratz & Baratz, 1970; Ogbu, 1987; Tulkin, 1972; Wright, 1980a). It was just assumed that the children who developed in urban tenements suffered from stimulus deprivation (Cole & Bruner, 1972; Day, 1983). As a result of these data-poor assumptions, many of the early programs were inappropriate (Ginsburg, 1972; Labov, 1972; Ogbu, 1978, 1982; Wright, 1981,1983). More recently, it has been proposed that the nursery school experience should focus on creating the motivation to learn and on fostering the development of habits such as exploration, persistence and problem-solving ability with which the child can demonstrate existing intellectual potential (Wright, 1983).

Possibly as a result of a "deficiency remediation" focus, preschool intervention programs were required to "prove" effectiveness long before such proof was required in the compulsory education system (Woodhead, 1985). Early results of the Head Start programs indicated that early positive gains in standardized IQ and achievement tests "washed out" after a period of time. This led to considerable pessimism regarding the efficacy of early intervention programs for the disadvantaged (Bronfenbrenner, 1974; Cirelli, 1969; Tizard, 1974).

Furthermore, these types of results were considered as evidence of the predominance of heredity in the nature/nurture controversy (Jensen, 1966, 1969). Little acknowledgement was given to the fact that "intelligence" could be expressed in ways or milieus that were not middle-class (Zigler & Berman, 1983).

Later results of early intervention programs (Lazar & Darlington, 1982; Schweinhart & Weikart, 1986) have indicated the long-term academic benefit of early intervention, e.g., less likelihood of special education placement or grade retention. In addition, there have been a number of other socially relevant outcomes such as greater numbers of intervention students completing high school, achieving higher levels of employment, and/or demonstrating more socially acceptable behavior. It has been argued that the fact that there were measurable differences between control and experimental groups four to fifteen years after treatment lends additional support to the contention that these results should be considered carefully (Allen, 1981).

Generally, intervention programs have ranged in the length of time of implementation as well as in intensity and in breadth. However, the assessment and evaluation procedures used have given little evidence that one approach along any of the dimensions is better than another in producing long-term effects (Ramey et al., 1982). To date, the most common curriculum models for preschoolers have been approaches which were psychoeducational, behavioral, cognitive-developmental, diagnostic-prescriptive, perceptual-motor, developmental, functional (Esterly & Griffin, 1987) and/or language oriented (Boyer, 1987).

There is a growing body of evidence to indicate that learning the processes of cognition is just as important to efficient thinking and learning as is intelligence itself (Haywood & Switzky, 1986b; Salzer, 1986). Probably as a result of the reported success in teaching awareness of metacognitive skills in school-aged children (Feurstein, 1979, 1980; Palinscar & Brown, 1987), there is recent interest in programs designed to teach metacognitive strategies to preschoolers through mediated learning (Burns, Haywood, Cox, Brooks, Green, Ransom, Goodroe & Willis, 1983; Haywood et al., 1987; Karnes, Johnson, Cohen & Beauchamp, 1986). The premise underlying a Canadian intervention study at the University of Western Ontario (UWO) was that low SES children do not do well academically because of cognitive strategies and styles which interfere with their use of intellectual potential (Wright, 1980, 1981a, 1981b, 1983). For example, low SES children have been found to have difficulty with representational or symbolic processing (Hunt, 1972; Jensen, 1969; Sigel, 1971). It has been hypothesized that this difficulty is a result of lack of order and routine in the home which precludes the development of concepts such as time and sequence, and/or of excessive noise and confusion which inhibits sensory discrimination and attention to human verbalization (Hunt, 1972).

Finally, although school readiness is often considered in terms of cognitive skills, the importance of social behaviours has also been recognized. Five of the major seven goals of Head Start programs were social in nature and included self-concept, self-confidence, self-discipline, self-worth and positive attitudes toward others (Zigler & Valentine, 1979). One of the more effective ways of realizing these goals may be by helping the parents to develop the same skills. (Seitz, Rosenbaum & Apfel, 1985). However, many parents do not have the time and/or the interest to participate in an intervention program. Thus, for the most part, intervention focuses on the child in formal settings such as nursery school.

It must be mentioned in passing that there is another side to the argument for early education. It has been suggested that many children today, placed very early into formal instruction, must sacrifice self-directed play for structured, competitive, achievement-oriented activities which are intended to speed up the course of their development (Hills, 1987). Children in middle SES, upwardly striving homes may be pressured at an early age for high and sustained achievement, possibly with the resultant development of a belief that love and acceptance depend on this achievement (Elkind, 1981; Hills, 1987). In the school situation, children are confronted with a situation where "success" is increasingly dependent on greater awareness of effort evaluation by adults (Dweck & Elliot, 1983). It has been pointed out that parents from both low and middle SES environments may unwittingly focus on the mastery of concrete goals rather than on the importance of play and parent-child communication as activities in their own right (Minuchin, 1987). It will obviously be important for intervention programs to focus on the development of positive self-concept and the "joy of learning", and to avoid the temptation to "hot-house" skill development and fact acquisition.

There would appear to be at least some current interest in "proving" the cost-effectiveness of early intervention programs (Barnett & Escobar, 1987; Clement, Schweinhart, Barnett, Epstein & Weikart, 1984; Weikart, 1985). However, a meta-analysis of existing research in the area led recent authors to claim that there are few conclusions which can be drawn concerning the relative economic effectiveness of early intervention (Barnett &

Escobar, 1987). This finding is not surprising given the diversity of programs, goals and backgrounds of the children involved. It has been demonstrated that some programs are very effective in changing the lives of the students involved (Weikart, 1985). That fact alone should be enough to encourage ongoing longitudinal research in the area.

3. Summary

There remain some difficulties in the assessment of preschool children, including problems of reliability and validity of instruments, and the necessity of using behavior rating scales completed by significant adults in the children's environments. Some of these difficulties can be overcome, or at least minimized, by using multiple measures and multiple sources of data. In this study, data was obtained from parents, teachers and the children themselves. In addition, although instruments were chosen which measured different domains of the children's development, an effort was made to ensure that these instruments measured similar perceptions of both parents and teachers.

Finally, although this study was designed to examine the relationship between home interactions and socioemotional and conceptual development, one desired outcome was that the results would be used to identify children who are at possible risk for academic difficulty. The first five years are crucial to children's cognitive and socioemotional development. There is evidence that intervention during this time can be effective and have long-range effects. Children in this study were in their fourth year. It is possible that intervention during their fifth year may help to build some of the skills which children who are at risk may be lacking. Current interest in teaching learning and metacognitive strategies to preschoolers is exciting and holds some promise, particularly for those children who have not learned to regulate their own learning and/or behavior.

C. Conclusions:

The literature reviewed has emphasized the importance of the child's interactions with the environment to his/her subsequent conceptual, self-concept and socioemotional development. During the child's early years and stages of development, parents are much more than mere providers of shelter and nourishment. There is increasing evidence to indicate that the types of interactions that parents have with their children are significant factors in child development. They types of interactions appear to be related to such factors as maternal age and education level. Interactions which provide stimulation, encourage exploration, provide language descriptors of behavior, and ensure, though consistency, an awareness of cause-effect relationships are essential to conceptual, socioemotional and self-concept development. This study will look at the relationships between/among different levels of stimulation and interaction within homes and the level of conceptual, self-concept and socioemotional development in children from these homes.

Much of the early research on children's conceptual development was unidirectional and did not consider the reciprocal interaction between children and environment and/or focused only on one domain, e.g., language (Bernstein, 1970), or social instability (Ogbu, 1978). Current theories of cognitive development are generally constructivist/interactional in nature. It is recognized that the child uses inherited intellectual components to construct intellectual knowledge and behaviours as a result of interactions with the environment. Thus, it is possible that the lower scores on measures of achievement and intelligence obtained by low SES children are a result of faulty, inadequate or non-existent interactions between the environment and the child as a learner.

Recent emphasis has been placed on the need to view children in a transactionist manner, i.e., as individuals interacting within and across a number of domains in a number of environments (Haywood & Switzky, 1986b). In order to be successful in early identification of children at risk for academic failure, it will be necessary to complete a general developmental screening of the child, including cognitive, social, and functional behavioral skills, using sources such as parents and teachers. It will also be important to observe the child in the home, interacting with his/her parent(s), and to determine the educational, social and employment levels of the family (Barnes, 1982; Walker, 1985).

This study was designed to assess the strengths and the needs of children in a small city in southeastern Ontario. It made use of measures of home experiences and interaction, and of the children's socioemotional development as perceived by parent, teacher and children. It also included measures of the children's adaptive behavior and conceptual development as perceived by parent and teacher, and of the children's self-concept and conceptual development in specific areas.

D. Purposes of the Study

The main purpose of this study was to determine if there were andy relationships between/among different aspects of conceptual, self-concept and socioemotional development in preschoolers from homes with different levels of parent-child interaction. Three specific sub-purposes of the study were as follows:

1. To determine whether, in a specific sample of children, there were differences in the types of stimulation and interaction offered in the home and if there were concomitant differences in the children's conceptual, self-concept and socioemotional development as measured by individual assessment and behavior rating scales.

2. To determine if there was a relationship between homes in terms of interactions and concomitant differences, as measured by behavior rating scales, in the parent's, teachers's and child's perception of the adult-child interactions.

3. To determine whether differences in the types of stimulation and interaction offered in the homes were related to socioeconomic level and/or the children's sex.

CHAPTER III

METHODOLOGY

A. Introduction:

The purpose of this study was to determine possible differences in conceptual and socioemotional development between children from homes with different levels of stimulation and interaction. In keeping with the current trend toward transactional assessment, a number of different measures were taken from a number of different sources. These will be discussed later in this chapter. However, they will be mentioned here in order to give the reader a sense of the assessment process as a whole.

The mothers of children in the sample were asked to rate their child's cognitive (Minnesota Preschool Inventory) and socioemotional development (Test of Early Socioemotional Development), and their perception of the child's interactional style (Parenting Stress Index.). The teachers of the children were also asked to rate cognitive (Vineland Adaptive Behavior Scale) and socioemotional development (Test of Early Socioemotional Development). They were also asked to give their perceptions of the child's interactional style in the classroom (Kindergarten Survival Skills).

The researcher also observed parent-child interactions within the child's home environment (Informal Scale) and assessed general parent interaction style and the type and amount of stimulation (Home Observation for Measurement of the Environment). Individual assessments were also conducted by the researcher with each of the children in the sample. Measures of conceptual development were chosen which assess only some of the concepts that are developing during the preschool years. The development of the numerical concepts mentioned in the previous chapter are also ones which have received considerable attention in the literature; thus, one measure was chosen to tap the development of these skills (CIRCUS: How Much and How Many). Yet another area of importance is the development of language skills, including receptive language which was assessed (Peabody Picture Vocabulary Test-Revised). The quality and/or quantity of interactions in some homes may not directly teach or model to children that they can be active thinkers and problem solvers when faced with new situations. Thus, a measure of conceptual problem solving was chosen as a means of tapping their awareness of cause-effect relationships and how past experience can relate to new situations (CIRCUS: Think it Through).

Finally, a measure of socioemotional development (Test of Early Socioemotional Development) and self-concept (Joseph Pre-School and Primary Self-Concept Screening Test) was taken for each child.

B. The Sample:

Seventy-five children, 38 females and 37 males, enrolled in junior kindergarten programs within a small city in eastern Ontario were the subjects of this study. The children attended five different classes within three schools in the same board of education. There were a total of 93 children enrolled in the five classes; however, 18 children were omitted from the study for the following reasons. The parents of 10 children did not wish to participate, six children had been identified as having special needs, and the parents of two children did not speak English.

School 1: (A.M.: 17 subjects, one special need student, two non-English speaking parents [Class 1]; P.M.: 19 subjects, two special needs students, three parent refusals [Class 2]): This school draws on a mixed socioeconomic base, ranging from children of medical personnel to children of multi-generation welfare recipients. The same teacher and aide teach both morning and afternoon classes.

School 2: (A.M.: 11 subjects, two special need students, two parent refusals [Class 3]; P.M.: 11 subjects, four parent refusals [Class 4]): This school draws mainly on children from low SES families. There are different teachers for the morning and afternoon classes, and in the morning there is an aide.

School 3: (A.M.: 17 subjects, one special needs student, one parent refusal [Class 5]): This school is located in a middle SES neighbourhood. There is an aide for the special needs student, involved essentially with that student.

These five classes were chosen because the families were all residing within the same small city, thus avoiding possible confounding effects between rural and urban environments. The children ranged in chronological age from 50 to 62 months, inclusively.

C. Procedure:

Initial contact had been made with the Director of Education for the school board in July, 1988. Final approval for the proposed study was obtained during the final week of November, 1988.

The principals of each of the three schools were contacted in the first week of December, 1988, and in each case, an interview was arranged for the following week to discuss the proposed study. All principals discussed the study with the teachers who would be involved prior to the researcher meeting with the teachers. Although all involved school personnel were given the opportunity to opt out of the proposed study, none chose to do so. Subsequent to a meeting to discuss the study and the involvement of each teacher, the researcher spent one full half day in each of the classrooms, interacting with each of the students.

During the last two weeks of December, 1988, the researcher familiarized herself with the instruments and automatized interview techniques with the help of friends and family members.

In the second week of January, 1989, the researcher again spent one half day in each of the classrooms. An introductory letter, co-signed by the principal of the school, was sent home to parents with each child (see Appendix A). A phone call was then made by the researcher to each parent to provide more information and to arrange for an appointment to visit the home. A table of random numbers was used to sequence the order of calls made to the homes of children in both morning and afternoon classes. However, it was not possible to adhere strictly to this ordering since some parents were available only in the evening or on the weekends. In each case, the appointment was made for a time when the child would be present so that parent-child interaction could be observed. The child's mother was the primary informant in each case, although in some cases the father figure was also present during the home interview.

The mother of each child was contacted by telephone one or two days prior to the actual home visit. Home visits ranged from one to two hours in duration. The purpose of the study was further elaborated in cases where the parent(s) made direct inquiries. Each interview began the with researcher getting written permission to assess the child in the school setting (see Appendix B). All interviews were structured by the assessment tools used, and in each case, questions were read to the parent(s) and responses were recorded by the researcher. Where responses were in a Likert format, an 8x11 inch card with the range of responses was given to the parent for reference. Home visits took place during the period from January 13th to February 16th, 1989, inclusively.

On the day following the home visit, the child's teacher was given the assessment instruments to be completed for that child. These completed forms were collected by the researcher on her next visit to the school. Teachers indicated that completion of the three instruments occupied approximately 50 minutes for each child. Teacher inventories were completed during the period from January 13th to March 16th, inclusively.

Once all home visits had been completed, children in each class were sequenced according to a table of random numbers. Each child was seen twice, individually, by the researcher, either at the back of the classroom in the partitioned-off coat room, or in an enclosed hallway opposite the classroom (School 2). Individual assessment with the children occupied an average of 30 minutes on the first occasion (CIRCUS, Test of Early Socioemotional Development, and Joseph Self-Concept Test) and 10 minutes on the second occasion (Peabody Picture Vocabulary Test-Revised). Following each session, each child was given a "certificate of effort" with a sticker on it (see Appendix C). The purpose of this certificate was to reinforce the child for his/her effort and to let the parent(s) know that the child had been seen by the researcher that day. The first series of individual child assessments took place during the period from February 16th to March 3, 1989, inclusively. The second series of assessments took place between March 6th and March 10th, 1989, inclusively.

All scoring was completed by the researcher. However, in order to avoid possible experimenter bias, no instruments were scored until all parent, teacher and child assessments had been completed. At that time, all protocols of each instrument were scored as a group. This was also done in order to avoid any experimenter bias.

D. Instruments and Data Collection:

The first assessment instrument discussed below was used to determine comparison groups between the children. The remainder to the several assessment instruments were used to obtain measures pertaining to the child from the following sources: (1) parents, (2) teachers, and (3) students.

1. Parents:

a. Home Observation for Measurement of the Environment (HOME), Level 2 (preschool) (Caldwell & Bradley, 1978):

This instrument was used as a basis for determining levels of stimulation and interaction in the home. "One of the major functions of the HOME Inventory is to identify homes which are likely to impede or foster cognitive development" (Caldwell & Bradley, 1978, p. 40). This instrument has been used extensively in research similar to that in the current study. Designed in a yes/no format, it gives some indication of the types and amount of stimulation thought to foster cognitive development. Areas included on the inventory are: Stimulation Through Toys, Games and Reading Materials (H1; 11 items); Language and Stimulation (H2; 7 items); Physical Environment: Safe, Clean and Conducive to Development (H3; 7 items); Pride, Affection and Warmth (H4; 7 items); Stimulation of Academic Behavior (H5; 5 items); Modelling and Encouragement of Social Maturity (H6, 5 items); Variety of Stimulation (H7; 9 items); Physical Punishment (H8; 4 items); and a Total Score (H9; 55 items). The norming sample consisted of 232 families in Arkansas. Test-retest reliability ranges (18 month interval) from .05 (Physical Punishment) to .70 (Stimulation Through Toys, Games and Reading Materials, and Total Score). Internal reliability ranges from .53 (Modelling and Encouragement of Social Maturity) to .88 (Stimulation Through Toys, Games, Reading Material) for subscales, and is .93 for the Total Score. Correlational studies were conducted examining the relationship between HOME scores and IQ scores as measured by the Stanford-Binet Intelligence Test at the 36 month, 54 month and 60-72 month levels. Results show consistently substantial correlations between IQ scores and the HOME Total Score (r=.55, .58, and .58, respectively), Stimulation Through Toys, Games, and Reading Materials (r=.47, .55, and .50, respectively), and Variety of Stimulation (r=.45, .51, and .36, respectively). Predictive validity was also assessed in correlational analysis. There is a positive relationship between HOME Total Scores at the 36-60 month level and the SRA Achievement Test Scores at the 60-120 month level in Reading (r=.64), Language Arts (r=.51), Mathematics (r=.51), and Composite Score (r=.58). SRA Reading, Language Arts, Mathematics and Composite Score also correlated substantially with HOME subtests Stimulation Through Toys, Games and Reading Material (r=.42, .45, .41, and .49, respectively), Pride, Affection and Warmth (r=.32, .29, .27, and .40, respectively), and Variety of Stimulation (r=.28, .35, .29, and .37, respectively).

The authors of the HOME suggest that the interviewer use subtle interview techniques rather than direct questioning to elicit parent responses. In this study, the examiner made notations of blank paper throughout the interview. Actual HOME responses were recorded on the basis of these notes immediately following each home visit. All "yes" responses were summed for each of the subtests and for the Total Score. These raw scores were used in the analyses.

The researcher had also used extensive clinical experience to design an informal checklist of both the children's general behavior (appropriate, neutral, inappropriately coercive, hostile, and/or whine) and the mother's interactions with the child (positive, neutral or negative physical contact, eye contact, and conversation , and occurrent or nonoccurrent reprimand and praise) during the home interview. As part of the interview, demographic data including maternal age, eduction, occupation, and marital status, and number and age of siblings was also collected. The mother's and, where there was a male adult in the household, the father-figure's occupational status were used to determine socioeconomic status with the Blishen Scales (Blishen & Carroll, 1978; Blishen & McRoberts, 1976).

b. Minnesota Preschool Inventory (MPI) Ireton & Thwing, 1979):

This instrument was chosen as a measure of the mother's perception of the child's conceptual and socioemotional development in various domains. It is a behavior rating scale which suffers from many of the previously noted problems in both behavior rating scales and preschool screening tests in general (e.g., the normative sample was 360 white children from six schools in Bloomington, Minnesota). However, the MPI has been used fairly extensively in research designed to pinpoint children who are at risk (Guerin & Gottfried, 1987; Ireton et al., 1981). The MPI was designed as a standardized screening instrument to determine a child's readiness to enter kindergarten using the mother's observation and rating of her child's behavior on 150 items. It is to be used with children from four to six years of age, inclusively. Domains included in the test are Self-Help (M1); Fine Motor Skills (M2); Expressive Language (M3); Comprehension (M4); Memory (M5); Letter Recognition (M6); Number Comprehension (M7); Immaturity (M8); Hyperactivity (M9); Behavior Problems (M10); and Emotional Problems (M11). Split-half reliability coefficients range from .29 (Number Comprehension) to .81 (Comprehension). Correlations between the scales and the teacher's rating of kindergarten performance for a sample of 287 children range from .07 (Self-Help, the only scale below .20) to .56 (Letter Recognition). The authors conducted a study analyzing the predictive power of the individual scales with a sample of 20 children who had been identified as poor performers by their teachers. The MPI had identified 12 of these children. Poor performers were most frequently identified by the Comprehension (58%), Letter Recognition (62%), Number Comprehension (62%), and Memory (44%) scales.

Items on the scale, which took approximately 15 minutes to complete, were read to the mother, and yes/no responses were recorded by the researcher. Profiles were also subsequently scored by the researcher by simply adding up the "yes" responses for each of the scales.

c. Test of Early Socioemotional Development (TOESD), Parent Rating Form (TP) (Hresko & Brown, 1984):

This behavior rating scale of 34 items was chosen as a measure of the parent's perception of the child's socioemotional development. It is a downward extension of the Behavior Rating Profile (BRP) (Brown & Hammill, 1983). It was designed as an "ecological approach to behavioral assessment", and since it has three forms, one each for parents, teacher and the child, it is amenable to comparison among raters. It is meant for use with children ages 36 through 95 months, inclusively. Questions on the parent scale relate to different aspects of the child's socioemotional behavior (e.g., #1 Doesn't follow rules set by parent; #12. Won't share belongings willingly). The Parent Scale is rated on a four-point Likert scale (very much like my child, somewhat like my child, not much like by child, not at all like my child). It was normed on a sample of 1773 parents across the United States. Efforts were made by the authors to match national population and race statistics as closely as possible. In terms of reliability, 53% (8) of the internal consistency coefficients are above .90, and 20% (3) exceed .80. Test-retest reliability was measured in a two week interval. Eighty percent (12) of the test-retest reliability coefficients exceed .90, while the remaining 20% (3) exceed .80. The authors state the "content validity of the TOESD scales was ensured through the statistical item analytic procedures" (p.19) used. Criterion-related validity was measured by correlating TOESD scores to BRP scores. Of the 15 coefficients reported for the three scales, 9 are significant at the .01 level of confidence, and 4 are at the .05 level of confidence. In addition, coefficients ranged from .35 to .98.

Items were read to the parent(s) in approximately 5 minutes. Responses were recorded and subsequently scored by the researcher. Responses were totalled for each of the Likert points. These totals were multiplied by the designated weights (zero for "very much like my child" to three for "not much like my child"). Raw scores were then converted to standard scores which were used in analyses.

d. Parenting Stress Index: Child Domain (PSI) (Abidin, 1983):

This behavior rating instrument is designed to identify "parent-child systems under stress" in families of preschool children. It was chosen as a measure of the parent's perception of the child's level and type of interaction in the home environment, i.e., the parent's perception of the child-parent interaction. It was known that the unemployment level and the number of single parent families is fairly high in some parts of the city where the study took place. It was felt that this instrument, which has been used fairly extensively to measure perceived child characteristics in families with handicapped children, would also be valuable for use with other families to determine parent perceptions of parent-child interactions. The instrument was directed toward the mother or female adult in the home. The 47 items of the Child Domain include measures of Total Score (PT1); Adaptability (P2; 9 items); Acceptability (P3; 6 items); Demandingness (P4; 5 items); Mood (P5; 7 items); Distractibility/Hyperactivity (P6, 11 items); and Reinforces Parent (P7; 9 items). Questions deal with child behaviours relating to these subdomains (e.g., There are some things my child does that really bother me a lot. My child is so active it exhausts me.). Responses are made on a five-point Likert scale (Strongly Agree, Agree, Not Sure, Disagree, Strongly Disagree). The norming sample consisted of 534 parents in central Virginia. Reliability coefficients are reported to range in magnitude from .62 to .70 for subscales of the Child Domain, and to be .89 for the Total Score. Test-retest reliability yielded Spearman rank-order coefficients of from .55 (one year interval), .63 (six month interval), .77 (three month interval), to .82 (three week interval) for the Child Domain. Concurrent and construct validation studies are reported for many different social situations and child conditions/behaviours. Only research of relevance to this study is reported here. Mothers with low levels of social support found their parent-child interactions to be unpleasant (r=.45). The Child Demandingness subscale correlates with the Child Control (.46) and the Fate/Chance .34) subscales of the Parent Locus of Control scale. Discriminant validity of the PSI was also examined in a number of situations. The author reported the Child Domain score was an "efficient discriminator" between hyperactive and normal children, and between abusive and non-abusive mothers. The Child Domain score, Child Mood, and Acceptability to Parent discriminated between families at risk for parenting problems and "other families. Finally, predictive validity is also reported. The author reported that the PSI would identify 75 to 89% to children who are at risk and require early intervention.

The scale requires 10 to 15 minutes to complete. Items were read to the parent(s) and responses were recorded and subsequently scored by the researcher. The weights given to different responses are indicated on the response sheet. Score in each of the subdomains were totalled and then totalled again to give the Total Score. These weighted raw scores were used in analyses.

2. Teachers:

a. Vineland Adaptive Behavior Scale (VABS), Classroom Edition (Sparrow, Balla & Cicchetti, 1985):

This tool was chosen as a measure of the teacher's perception of the child's level of conceptual development in various domains. The VABS is also a behavior rating instrument. One of the reasons that this tool was chosen as a measure of teacher perception of a child's development was that the teachers involved in the study were already familiar with and comfortable in using the VABS, thereby reducing the need for any possible "inservicing" in its completion. It was also chosen because of its relatively good psychometric data. The VABS was designed to assess the personal and social functioning of individuals from three through 12 years of age, inclusively. It was normed on a "representative national sample of approximately 3000 children" (p.2). Its 233 items include the domains of Receptive, Expressive and Written Communication (VC1); Personal, Domestic and Community Self-Help, and Daily Living Skills (VD2); Interpersonal, Play and Leisure Time, and Coping Skills (VS3); Gross and Fine Motor Skills (VM4); and Composite Total Score (VT5). Reliability coefficients for the composite score of children at the age of those in the current study range from .96 to .98, while the coefficients for individual domains range from .77 (Motor

Skills) to .95 (Communication, and Daily Living Skills). Correlation coefficients between the VABS and the Kaufman Assessment Battery for Children (K-ABC; Kaufman & Kaufman, 1983) range from .23 (VABS Motor Skills and K-ABC Sequential Processing) to .64 (VABS Communication and K-ABC Achievement). Correlation coefficients between the VABS and the PPVT-R range from .20 (Motor Skills) to .45 (Communication). Correlations between the VABS Composite Total Score the Stanford-Binet Intelligence Scale (Terman & Merril, 1973) is .49.

The scale, which required approximately 30 minutes to complete, was done individually by each child's teacher. Responses were scored by the researcher by adding up the total in each of the three columns (2=the child usually demonstrates this behavior; 1=the child sometimes demonstrates this behavior; 0=the child never demonstrates this behavior). Raw scores in each domain were transformed to standard scores using the tables provided in the manual. At the age level of the student in the current study, there is one table for each two-month age interval. These standard scores were used in analyses.

b. Test of Early Socioemotional Development (TOESD), Teacher Rating Form (TT) (Hresko & Brown, 1984):

This behavior rating tool was chosen as a measure of the teacher's perception of the child's level of socioemotional development. It was chosen for the reasons similar to those for which the Parent Form was chosen. Briefly, it is a downward extension the Behavior Rating Profile (BRP; Brown & Hammill, 1983). It was designed as an "ecological approach to behavioral assessment", and since it has three forms, one each for parents, teacher, and the child, it is amenable to comparison among raters. It was designed for use with children ages 36 through 95 months, inclusively. The 36 items of the TOESD-TT are rated on a four-point Likert scale and relate to the child's socioemotional development (e.g., #1. Tattles on classmates; #12. Is an underachiever). Reliability and validity statistics were outlined earlier in describing the Parent Form of this test.

The scale takes approximately 5 to 10 minutes co complete. Teachers were asked to complete a TOESD for each student. Responses were scored by the examiner in a manner identical to that used for the Parent Form.

c. Kindergarten Survival Skills (KSS) (McCormick & Kawate, 1982):

This nonstandardized behavior rating instrument was chosen as a measure of the teacher's perception of the level and type of the child's interaction in the classroom situation. This particular tool was chosen as a result of a lack of standardized instruments which measure this type of behavior. The scale was constructed from a survey of a large sample of kindergarten teachers. In includes behaviours which these teachers felt were either "very important" or absolutely essential" to participation in the kindergarten classroom. Since the researcher was concerned to obtain multiple measures from multiple sources, this scale offered a measure of some of the items of the other behavior rating forms completed by the parents. The domains included in the 36 item scale are Independent Task Work (K1; 5 items); Group Attending/Participation (K2; 6 items); Following Class Routine (K3; 6 items): Appropriate Classroom Behavior (K4; 5 items); Self-Care (K5; 4 items); Direction Following (K6; 3 items); Social/Play Skills (K7; 5 items); Functional, Communication (K8; 2 items) and Total (KT9). Responses are made on a five-point Likert scale which rages from "very much like this child" to "not at all like this child." The authors of this scale stated that this scale requires appropriate reliability and validity research.

The scale, which takes approximately 15 minutes to complete, was done individually by each child's teacher. Responses were scored by the researcher. The totals of each of the domains were again totalled to give the overall Total Score. These raw scores were used in the analyses.

3. Children:

a. CIRCUS A (Educational Testing SErvice, 1976):

This battery of instruments, part of the Sequential Tests of Educational Progress (STEP III), was designed to "diagnose the instructional needs of individual children and to monitor and evaluate early eduction programs. One of the reasons this tool was chosen to measure areas on concept development was that the different levels of the battery (up to, and including, grade 12+) will allow for longitudinal follow-up of children. Another reason for choosing this tool was the paucity of tools with good reliability and validity at this age level. The items on the CIRCUS tests at this level had good face validity for the purposes of the current study. Only the How Much and How Many (C2; mathematics computation and concepts: counting, relational terms and numerical concepts; 40 items) and the Think it Through (C1; problem solving: classification, solution evaluation and time sequence; 32 items) subtests (10 minutes each) were administered. These subtests were felt to be representative measures of concept development in major areas of concern (Wright, 1983), and time constraints did not permit administration of the whole battery to each child. At the nursery school level, 1006 children with a mean age of 57 months were used in the norming sample. Level A (nursery school) correlates with Level B (grade one) at the .60 level for the How Much and How Many subtest and at the .41 level for the Think it Through subtest. The How Much and How Many subtest correlated with the teachers' ratings of children's quantitative skills at the .55 level, while the Think It Through subtest correlated with teachers' ratings of children's problems solving skills at the .38 level.

The tests were administered on an individual basis to each child by the examiner during the first session. Children were asked to point to the picture with best answered a question asked by the examiner. Responses were recorded on a coded sheet by the examiner. Correct responses were totalled for each of the two tests and these raw scores were used in the analyses.

b. Test of Early Socioemotional Development (TOESD), Student Form (TS) (Hresko & Brown, 1984):

This tool was chosen as a measure of the child's perception of his/her own socioemotional development. It was chosen for reasons identical to those used in the choice of the Parent and Teacher Forms. Briefly, it is a downward extension of the Behavior Rating Profile (BRP) (Brown & Hammill, 1983). It was designed as an "ecological approach to behavioral assessment," and since it has three forms, one each for parents, teacher and the child, it is amenable to comparison among raters. It was designed for use with children ages 36 through 95 months, inclusively. The 30 items of the TOESD-TS are responded to on a yes/no basis and relate to how the child perceives his/her socioemotional environment (e.g., #1. Do your parents treat you like a big kid?; #12. Do you have fun at home?). Reliability and validity statistics were presented earlier in discussing the Parent Form of this instrument.

Administration of this test required approximately five minutes. Questions were read to each student individually, and responses were recorded by the examiner during the first session. The response profile indicates with brackets which of the "yes" and "no" responses are to be summed. The combined raw score was then transformed to a standard score for analyses.

c. Joseph Pre-School and Primary Self-Concept Screening Test (J1) (Joseph, 1979):

This instrument was chosen as a measure of the child's perception of the level and successfulness of his/her interactions with others. Currently, it is one of the only published tests of its kind, i.e., a measure of self-concept, for children at this age. The test also is relatively inexpensive and quick to administer. The child is asked to respond to 15 self-concept items. With each question, the child is asked to point to the one of a pair of (gender-appropriate) pictures which s/he feels best depicts her/himself. A test-retest reliability coefficient of .87 was reported for a sample of 18 preschoolers (median age of 58 months) over a four week interval. Kuder-Richardson estimates of internal consistency range from .59 to .81 with a median correlation of .73. One measure of construct validity was obtained by having teachers complete the Inferred Self-Concept Judgement Scale for a group of 25 children with a median ge of 58 months. The correlation coefficient between the scores of the two tests was .51. Teachers were also asked to rate the same 25 children on a 10 item self-concept rating scale. The correlation coefficient between this scale and the Joseph was .65. The Joseph scores of 27 children with a median age of 59 months correlated significantly with the Slosson Intelligence Test (r=.66, P<.001) and the Preschool Language Scale IQ's (r=.63, P<.001). The Joseph scores of preschool children rated as high achievers (top 15%) by their teachers were also significantly higher (P<.0001) than were scores of children rated by their teachers as being low achievers (bottom 15%).

The test, which required approximately five minutes to complete, was administered individually to each student during the first session. The child's response totals (two for a positive response, one for a neutral response, and zero for a negative response) were used in analyses.

d. Peabody Picture Vocabulary Test - Revised (PPVT-R) - Form M (PPT) (Dunn & Dunn,1981):

The PPVT-R is designed to measure the subject's receptive English vocabulary. It was chosen because it is untimed and is quick nd easy to administer. In this study it was also chosen to give a rough estimate of the child's ability to interact on a successful verbal receptive level with his/her teacher and peers. The PPVT-R consists of a series of plates with four line drawings. The subject is asked to indicate (in this case by pointing) which of the drawings best illustrates a word spoken by the examiner. There are suggested starting points for different chronological ages, and items are administered until a basal of eight sequential correct items and a ceiling of six errors in eight sequential items are achieved. There are also five training plates which are used to ensure that the subject understands, and can respond to, instructions. The test was normed on 100 male and 100 female children at each six month age interval for children at the age of those in the current study. Split-half reliability at the four to five year level range from .74 to .78. Immediate retest reliability for standard score equivalents ranges from .76 (48 to 59 months, N=63) to .77 (60 to 69 months, N=52). Delayed retest reliability (9 to 31 days) for standard score equivalents ranges from .77 (48 to 59 months) to .58 (60 to 69 months). Correlations with other vocabulary tests and with individual intelligence tests range from moderate (Wechsler Preschool and Primary Scale of Intelligence Vocabulary subtest, r=.30) to high (Van Alstyne Picture Vocabulary and the Full-Range Picture Vocabulary test, r=.86).

This test was administered during a second individual session of approximately 10 minutes. Correct responses were totalled and the raw scores were transformed to the standard scores which were used in analyses.

CHAPTER IV

RESULTS

This study posed a number of different hypotheses, the evidence for which was sought with a number of different instruments using data from a number of different sources. When a study consists of a significantly large number of analyses, the probability of getting significance in results by chance is raised. In order to avoid the problem of experiment wide bias which can result when many questions are asked of the same investigation, alpha in the current study was set at .005 (Rankin, 1981). It is recognized that setting alpha at this level is highly conservative. However, the nature of this study, i.e., the effects of parent-child interactions on development, is a highly sensitive one. Thus, every effort was made to ensure that conclusions reached were valid.

The purpose of this study was to determine the relationships between the quality of home interaction and the conceptual and emotional development of junior kindergarten students in a small city in eastern Ontario. Results of the HOME Inventory Total (H9) were used to group children on the basis of a median split. However, there were six students with scores of 44 at the median, and the decision was made to include all of these in the lower group. Thus, the lower group contained some students whose scores are slightly above the median. It is recognized that the inclusion of these students in the lower group added to the conservative acceptance of differences in the groups. Similarly, the 10 children who were not included in the study because of a lack of parental consent came from homes which, from outward appearance and from the physical appearance of the children, would likely have scored at the lower extreme of the HOME Inventory. Thus, the true difference among the children in the classrooms studied is likely even more extreme than the results of this study would indicate.

Scores in the lower group ranged from 17 to 44, while scores in the higher group ranged from 45 to 55 (maximum). Thirty-nine students, 17 females and 22 males, whose HOME scores were 44 or below formed the "Low" group. Thirty-six students, 21 females and 15 males, whose HOME scores were 45 or above formed the "High" group. There was no significant difference in group composition by gender (chi=1.628, df=1, P<.75).

The range, mean, standard deviation (S.D.) and standard error of measurement (S.E.M.) of both the "High" and the "Low" groups for all instruments (INS.) used in the current study are described in Table 1 (Appendix D).

It was important to determine whether "High" and "Low" groups were clearly distinct with respect to the subscales of the HOME and HOME total score. Thus, nine one-way ANOVAs were conducted using the subscale scores and the total score as independent variables. For all subscales and for the total score, children in the "High" group clearly experienced more positive interaction/stimulation and less physical punishment than did children in the "Low" group. Therefore, in the current study there are two distinct groups as measured by the HOME. See Table 2 (Appendix D) for a summary of these ANOVAS.

Analyses were also conducted in order to determine if gender was a factor. Each subtest of the HOME and the HOME total score was submitted to a two-way ANOVA, with "High"/"Low" grouping and gender as independent variables. See Table 3 (Appendix D) for summary results of these ANOVAs. Only Physical Punishment (H8) was significant (F=8.486, df=1/71, P<.005) for gender. Boys were significantly more likely to be the recipients of physical punishment than were girls. There were no "High"/"Low" by gender interactions. Thus, for all further major analyses, gender was collapsed.

A. Hypotheses

Specifically, the hypotheses which were addressed in this study were:

Hypothesis 1: Children from homes with higher levels of stimulation/interaction will have higher scores on measures of conceptual development than will children from homes with lower levels of stimulation/interaction.

Hypothesis 2: Children from homes with higher levels of stimulation/interaction will have higher scores on measures of socioemotional development than will children from homes with lower levels of stimulation/interaction.

Hypothesis 3: Mothers' perception of child-parent interactions will be more positive for children from homes with higher levels of stimulation/interaction than for children from homes with lower levels of stimulation/interaction.

Hypothesis 4: Teachers' perception of child-teacher interactions will be more positive for children from homes with higher levels of stimulation/interaction than for children from homes with lower levels of stimulation/interaction.

Hypothesis 5: Children from homes with higher levels of stimulation/interaction will have a more positive self-concept than will children from homes with lower levels of stimulation/interaction.

Hypothesis 6: There will be no relationship between the level of stimulation and interaction in the home and socioeconomic level.

B. Analyses

1. Hypothesis 1:

Children from homes with higher levels of stimulation/interaction will have higher scores on measures of conceptual development than will children from homes with lower levels of stimulation/interaction. Specifically, children from homes with higher levels of stimulation/interaction will have higher scores on the conceptual scales (M1-7) of the MPI, the four subscales and the total of the VABS, the two CIRCUS scales and the PPVT-R.

The Minnesota Preschool Inventory (MPI) is a screening instrument used to determine the mother's perception of her child's conceptual development. For simplicity sake, the scales have been referred to as M1 to M7. See Table 4 (Appendix D) for a summary of the ANOVAs conducted with the MPI data. Children from homes with higher levels of stimulation/interaction were significantly more likely to score higher in the mothers' perception in the areas of fine motor skills (M2; x=11.76, 9.13; F=9.431, df=1/73, P<.003), expressive language (M3; x=16.49, 14.36; F=17.005, df=1/73, P<.001), comprehension (M4; x=25.81, 21.51; F=16.284, df=1/73, P<.001), memory (M5; x=10.03, 8.31; F=11.126, df=1/73, P<.001), and number comprehension (M7; x=5.95, 4.46; F=21.411, df=1/73, P<.001) than were children from homes with lower levels of stimulation/interaction. There was also a trend for children from homes with higher levels of stimulation/interaction to score higher in the perception of mothers in areas of letter recognition (M6; x=3.49, 2.18; F=7.228, df=1/73, P<.009) than did children from homes with lower levels of stimulation/interaction.

The Vineland Adaptive Behavior Scales (VABS) were used as a measure of the teacher's perception of the child's conceptual development. The ANOVAs conducted using the data from the VABS are summarized in Table 5 (Appendix D). Teachers perceived that children from homes with higher levels of stimulation/interaction had significantly higher developed skills in communication (VC1; x=94.27, 84.64; F=14.601, df=1/73, P<.001), socialization skills (VS3; x=93.92, 82.21; F=30.669, df=1/73, P<.001), motor skills (VM4; x=99.62, 87.69; F=18.872, df=1/73, P<.001) and overall adaptive functioning (VT5; x=94.82, 84.06; F=20.256, df=1/73, P<.001) than did children from homes with lower levels of interaction/stimulation.

The CIRCUS subtests of Problem Solving (C1) and Numerical Concepts (C2) and the Peabody Picture Vocabulary Test-Revised (PPVT-R; Receptive Vocabulary) (PPT) were used as individually administered measures of concept development. See Table 6 (Appendix D) for a summary of the ANOVAs conducted using the data from these scales. Children from homes with higher levels of interaction/stimulation scored significantly higher on measures of problem solving (C1; x=19.00, 13.67; F=24.306, df=1/73, P<.001), development of numerical concepts (C2; x=25.62, 19,56; F=17.859, df=1/73, P<.001) and receptive vocabulary (PPT; x=101.97, 86.49; F=17.820, df=1/73, P<.001) than did children from homes with lower levels of stimulation/interaction.

In summary, children from homes with higher levels of stimulation/interaction were significantly more likely to score higher on both individual assessments and on measures of parent and teacher perception of development in areas of communication, fine motor skills, and numerical concepts than were children from homes with lower level of stimulation/interaction. They were also significantly more likely to score higher on measures of problem solving, mothers' perception of comprehension and teachers' perception of socialization skills. These results support hypothesis 1.

2. Hypothesis 2:

Children from homes with higher levels of stimulation/interaction will have higher scores on measures of socioemotional development than will children from homes with lower levels of stimulation/interaction.

The Test of Early Socioemotional Development (TOESD) is a rating scale designed to measure a child's socioemotional development from the perspective of the child's mother (TP), teacher (TT), and the child (TS). A summary of the ANOVAs conducted using TOESD data can be found in Table 7 (Appendix D). Students from homes with higher levels of stimulation/interaction scored significantly higher on the student measure (TS; x=9.50, 6.28; F=13.859, df=1/73, P<.001) and the parent measure (TP; x=10.00, 7.20; F=10.067, df=1/73, P<.002) of socioemotional development than did children from homes with lower levels of stimulation/interaction. In addition, the differences on the teacher measure (TT; x=11.47, 9.78; F=4.495, df=1/73, P<.037) approached significance.

In summary, children from homes with higher levels of stimulation/interaction scored significantly higher on student and parent measures of socioemotional development and tended toward higher scores on measures of teacher perception of socioemotional development than did children from homes with lower levels of stimulation/interaction. These results lend partial support to hypothesis 2.

3. Hypothesis 3:

Mothers' perception of child-parent interactions will be more positive for children from homes with higher levels of stimulation/interaction than for children from homes with lower levels of stimulation/interaction.

The Parenting Stress Index (PSI) is a screening instrument used to measure the mother's perception of her child's interactions with her. See Table 8 (Appendix D) for a summary of the ANOVAs conducted with data from the PSI. Children from homes with higher levels of stimulation/interaction engaged in interactions which were significantly less stressful to the parent overall (PT1; x=163.00, 144.93; F=14.413, df=1/73, P<.001) and specifically in terms of distractible/hyperactive behavior (P6; x=31.22, 25.90; F=17.934, df=1/73, P<.001). In addition, there was a trend for children from homes with higher levels of stimulation/interaction to be perceived of as being more adaptable (P2; x=37.81, 33.88; F=4.400, df=1/73, P<.039), acceptable (P3; x=24.83, 22.03; F=7.771, df=1/73, P<.007) and less moody (P5; x=19.58, 17.38; F=8.127, df=1/73, P<.006) than were children from homes with lower levels of stimulation/interaction.

The final four scales of the Minnesota Preschool Inventory (MPI) also were used to measure the mother's perception of her child's interactions/behaviours in the home. The ANOVAs conducted with this MPI data are summarized in Table 9 (Appendix D). Children from homes with higher levels of stimulation/interaction were perceived by mothers to be significantly more mature (M8; x=3.22, 5.67; f=12.206, df=1/73, P<.001), less hyperactive (M9; x=2.24, 4.54; F=18.794, df=1/73, P<.001) and to have fewer behavior problems (M10; x=2.89, 6.05; F=13.123, df=1/73, P<.001) than were children from homes with lower levels of stimulation/interaction. There was also a trend for children from homes with higher levels of stimulation/interaction to be perceived by mothers as having fewer emotional problems (M11; x=2.32, 3.05; F=4.475, df=1/73, P<.038) than were children from homes with lower levels of stimulation/interaction.

In summary, children from homes with higher levels of stimulation were perceived by mothers to be significantly less hyperactive, immature, and moody, less likely to have behavior problems, and generally less stressful than children from homes with lower levels of stimulation/interaction. These results offer support for hypothesis 3.

4. Hypothesis 4:

Teachers' perception of child-teacher interactions will be more positive for children from homes with higher levels of stimulation/interaction than for children from homes with lower levels of stimulation/interaction.

The Kindergarten Survival Skills Scale (KSS) was used in this study as a measure of the teacher's perception of the child's interaction with herself and with the other children in the classroom. See Table 10 (Appendix D) for a summary of the ANOVAs conducted with the KSS data. Children from homes with higher levels of stimulation/interaction were significantly more adept at independent task work (K1; x=8.83, 12.38; F=10.451, df=1/73, P<.002), attending and participating in group situations (K2; x=10.28, 14.30; F=10.571, df=1/73, P<.002), following class routine (K3; x=8.83, 12.50; F=11.443, df=1/73, P<.001), following directions (K6; x=4.08, 6.38; F=13.269, df=1/73, P<.001) and at overall classroom interaction (KT9; x=55.17, 74.55; F=9.614, df=1/73, P<.003) than were children from homes with lower levels of stimulation/interaction. There was also a trend for children from homes with higher levels of stimulation/interaction to be more adept at functional communication (K8; x=2.86, 3.83; F=4.800, df=1/73, P<.032) than were children from homes with lower levels of stimulation/interaction.

In summary, children from homes with higher levels of stimulation/interaction were significantly more able to follow the wishes of others and tended to be more adept at overall classroom "survival" skills than were children from homes with lower levels of stimulation/interaction. These results offer support for hypothesis 4.

5. Hypothesis 5:

Children from homes with higher levels of stimulation/interaction will have a more positive self-concept than will children from homes with lower levels of stimulation/interaction.

The Joseph Scale was used in this study as a measure of the child's self-concept. A summary of the ANOVA conducted using the data from the Joseph can be found in Table 11 (Appendix D). Children from homes with higher levels of stimulation/interaction had a significantly higher self-concept (J1; x=24.31, 19.28; F=19.788, df=1/73, P<.001) than did children from homes with lower levels of stimulation/interaction. These results support hypothesis 5.

6. Hypothesis 6:

There will be no relationship between the level of stimulation and interaction in the home and socioeconomic level.

The occupations of the mother and, where there were two adults in the home, the father-figure also, were coded according to the Blishen Indexes (Blishen & Carroll, 1978; Blishen & McRoberts, 1976) in order to arrive at socioeconomic status (SES). Where both adults in the home were employed, the indexes were summed to give a single code for the purposes of analyses. Where the adult(s) in the family was (were) unemployed an arbitrary decision was made to allocate an index of 20.0, the lowest index on the scale. It is recognized that hypothesis 6 is expressed in null form, in contrast to previous hypotheses which were expressed in experimental form. However, it was felt that the review of the literature had indicated that levels of stimulation and interaction should have no direct relationship with socioeconomic level.

A correlational analysis was done using these variables. The results of this analysis are shown in Table 12 (Appendix D). Blishen Index scores ranged from 20.001 to 150.337 with a mean of 60.844. HOME subtests measuring stimulation through toys, games and reading material, stimulation of academic behavior, modelling and encouragement of social maturity, variety of stimulation, and the HOME total score (H1, H5, H6, H7 and H9, respectively) all correlated at a .001 level of significance with SES (r=.543, .405, .450, .516 and .528, respectively). There was also a trend (P<.05) for homes with higher SES levels to provide more language stimulation, more pride, affection and warmth, and less physical punishment than homes with lower SES levels (H2, H4, and H8, respectively).

An ANOVA was also conducted to determine whether there was a significant difference between the "High" and the "Low" group in terms of SES level (see Table 13, Appendix D). The "High" group had a significantly higher SES level than did the "Low" group (BL; x=76.73, 46.19; F=15.713, df=1/73; P<.001).

In summary, for the sample used in the current study, there was a significant difference between the "High" and "Low" groups in terms of socioeconomic status. Socioeconomic status was most closely related to the stimulation of academic behavior, possibly through the provision of toys, games and reading material and a variety of experiences, and to the encouragement of social maturity. These results do not support hypothesis 6. However, hypothesis 6 was supported in socioemotional areas of pride, affection and warmth and less physical punishment.

In order to determine the possible effects of socioeconomic status on conceptual and socioemotional development as well as on parent and teacher perceptions of child-adult interactions, analyses of covariance were conducted with socioeconomic status as the covariate and all assessment measures as dependent variables. See Table 14 (Appendix D) for a summary of these analyses. When "High"/"Low" groups were adjusted for the covariate, most of the differences remained at the level of significance reported for the ANOVAs. However, there were some minor changes. On measures of conceptual development, differences between the "High" and "Low" groups only approached significance for the CIRCUS How Much and How Many (C2) (F=9.619, df=1, P<.009), VABS Communication (VC1) (F=7.290, df=1, P<.009), and VABS Motor Skills (VM4) (F=6.942, df=1, P<.010). On measures of mothers' perception of child-parent interactions, children from the "High" group were significantly more likely to be perceived as Acceptable (PSI:P3; F=8.263, df=1, P<.005) than were children from the "Low" group. On measures of teachers' perception of child-teacher interactions, differences between the "High" and "Low" groups only approached significance for Following Class Routine (F=6.473, df=1, P<.013) and Direction Following (F=7.264, df=1, P<.009) (K3 and K6 of the KSS, respectively). These results would indicate that, for the current sample, the relationships between socioeconomic status and the variables measured was minimal. In other words, while the "High" and "Low" groups did differ significantly in terms of SES level, SES level did not have a significant relationship to measures of conceptual and socioemotional development. Rather, the relationship between the amount and type of stimulation/interaction in the home would appear to be the most important factors in conceptual and socioemotional development. These results are interpreted to offer indirect support for hypothesis 6.

C. Additional Analyses:

1. Analyses of gender differences. At the beginning of this chapter, there was a description of the analyses done to determine gender differences on the HOME Scale. On the basis of these results, gender was collapsed for all further major analyses. However, there was some interest in determining possible gender differences on the different measures used. Thus, as supplementary analyses, data from all the other instruments used were also submitted to two-way ANOVAs, with "High"/"Low" grouping and gender as the independent variables.

The ANOVAs conducted using the Minnesota Preschool Inventory are summarized in Table 15 (Appendix D). In the perception of mothers, girls had significantly stronger self-help (MPI M1; F=11.660, df=1/71, P<.001) and fine-motor skills (MPI M2; F=16.637, df=1/71, P<.001) than did boys. There was also a trend for mothers to perceive boys as being more hyperactive (MPI M9; F=6.696, df=1/71, P<.012) and as having more behavior problems (MPI M10; F=6.870, df=1/71, P<.011) than girls. These results were not unexpected, since they reflect "typical" findings.

Table 16 (Appendix D) is a summary of the ANOVAs conducted using the data from the Vineland Adaptive Behavior Scales. There was also a trend for teachers to perceive girls as having better daily living skills (VABS VD2; F=4.507, df=1/71, P<.037) than boys.

See Table 17 (Appendix D) for a summary of the ANOVAs conducted using the data from the Test of Early Socioemotional Development. Mothers were significantly more likely to perceive that girls had better socioemotional development (TP; F=9.132, df=1/71, P<.003) than did boys.

The ANOVAs conducted using the data from the Kindergarten Survival Skills are summarized in Table 18 (Appendix D). Teachers were significantly more likely to perceive that the girls were capable of more independent task work (KSS K1; F=10.871, df=1/71, P<.002) than were the boys. There was also a tendency for teachers to perceive that girls were more capable of appropriate classroom behavior (KSS K4; F=7.205, df=1/71,

$P<.009$), better able to follow general class routine (KSS K3; $F=.085$, $df=1/71$, $P<.016$), and more likely to generally interact more appropriately in the classroom (KSS KT9; $F=.043$, $df=1/71$, $P<.043$) than were boys.

There were no significant interactions between gender and "High"/"Low" groupings on any of the instruments used. These results indicate that, while gender was not a significant factor in the current study, teachers and mothers do tend to perceive of girls as having better developed self-help skills and generally better developed classroom survival and behavior skills than do boys.

2. Interactions and demographics. During the interview session in the home, the author recorded an informal measure of children's behavior (BE: appropriate; neutral; inappropriately coercive, hostile, and/or whiny) and of the types of interaction the mother engaged in with her child (I1: positive, neutral or negative physical contact; I2: positive, neutral or negative eye contact; I3: positive, neutral or negative adjectival reference; I4: positive, neutral or negative conversation; I5: occurrence or nonoccurrence of reprimand; I6: occurrence or nonoccurrence of praise). Mothers' marital status (MM), age within decades (MA), and educational level (ME) were also recorded. These data were submitted to analyses of variance. See Table 19 (Appendix D) for a

summary of these ANOVAs.

Mothers in homes with higher levels of stimulation/interaction were significantly more likely to engage in positive physical contact (I1; F=11.460, df=1/73, P<.001), positive eye contact (I2; f=12.210, df=1/73, P<.001), more positive conversation (I4; F=8.219, df=1/73, P<.005), and less reprimand (I5; F=12.440, df=1/73, P<.001) than were mothers in homes with lower levels of stimulation/interaction. Mothers in homes with higher levels of stimulation/interaction were also significantly more likely to be married (MM; F=13.227, df=1/73, P<.001). Children from homes with higher levels of stimulation/interaction were also significantly more likely to behave in an appropriate manner (BE; F=9.626, df=1/73, P<.003). Mothers in homes with higher levels of stimulation/interaction tended to be older (MA; F=4.424, df=1/73, P<.039) and to engage in more positive adjectival reference (I3; F=6.532, df=1/73, P<.013) and in more praise (I6; F=4.20, df=1/73, P<.049) than did mothers from homes with lower levels of stimulation/interaction. In summary, children from homes with more stimulation/interaction tended to be perceived by mothers to engage in more positive child-parent interactive behavior than were children from homes with lower levels of stimulation/interaction. These results lend more specific support to the interaction data obtained from the HOME. They also support the contention that the two groups in the current study were clearly distinct.

The interactional and demographic data described above were also correlated with the scores for Motor (MTR) and Language (LNG) problems on the MPI, and the Blishen score (BL). In the discussion which follows, only those correlations which are significant at the .001 level (r<.3799) and which add to the results already presented will be mentioned. This analysis is summarized in Table 20 (Appendix D).

"High"/"Low" grouping correlated with MA (Mother's Age), ME (Mother's Education), I5 (Reprimand) and BL (SES). Maternal age correlated with both maternal education and SES, while maternal education correlated with SES. In other words, mothers in homes with higher levels of stimulation/interaction were likely to be older, to have more education, to be at a higher SES level, and to engage in fewer reprimands of their children than were mothers in homes with lower levels of stimulation/interaction. Older mothers tended to be at higher SES and educational levels, while mothers with higher education levels also tended to be at higher SES levels. Positive parent-child interactions, i.e., physical and eye contact and adjectival reference, correlated with more appropriate child-parent interactions. This finding supports the contention that the child in the family is part of a system. Thus, the behavior of the child is affected by, and in turn affects, the behavior of others.

3. Correlation of measures of concept development. The subtests used to measure concept development in different domains using different sources (Teacher: Vineland Adaptive Behavior Scale; Parent: Minnesota Preschool Inventory; Student: CIRCUS Numerical Concepts and Problem Solving, and Peabody Picture Vocabulary Test) were submitted to a correlational analysis. In the discussion below, only those correlations which are significant at the .001 level (r>.3799) and which are relevant to results previously discussed will be mentioned. This analysis is summarized in Table 21 (Appendix D).

Mothers' perceptions of the level of development of children's self-help skills, motor skills, and expressive language and comprehension correlated with teachers' perception of the level of development of children's daily living skills, motor skills, and communication skills, respectively.

Mothers' perception of the level of development of langauge/comprehension skills, memory, letter recognition and number comprehension skills, and teacher's perception of the level of development of communication and socialization/comprehension skills correlated with each other and with measures of numerical concepts, problem solving and receptive vocabulary development.

These results indicate that measures of conceptual development derived from different sources are significantly correlated, thus giving stronger support to the evidence used to reject hypothesis 1. In other words, children from homes with higher levels of stimulation/interaction score at a significantly higher level on measures of conceptual development than do children from homes with lower levels of stimulation/interaction.

4. Correlation of measures of socioemotional and self-concept development. The subtests used to measure socioemotional development (Test of Early Socioemotional Development: TS, TT, TP), self-concept (Joseph: J1), and adaptive/interactional behavior (Kindergarten Survival Scale and Parenting Stress Index) were also submitted to correlational analysis. In the discussion below, only those correlations which were significant at the .001 level (r>.3799) and which elaborate on previous results will be mentioned. See Table 22 (Appendix D) for a

summary of this analysis.

There was a correlation between teachers' perception of children's level of socioemotional development and their perception of the children's ability to engage in all measured classroom interactions except asking for assistance. There was also correlation between/among most subtests of the KSS.

There was a correlation between the mothers' perception of children's level of socioemotional development and their perception of the children's ability to engage in appropriate interactions with the parent. There was also correlation among/between most subtests of the PSI.

Student measures of socioemotional development and self-concept were not correlated, possibly indicating that these measures were tapping different aspects of development. It is also possible that the different format of the measures resulted in different response sets. Intuitively and clinically, it was felt that the language style and the vocabulary of the questions and the "yes"/"no" response format of the TOESD-TS was at a very advanced level for most of the subjects in this study.

Interestingly, there were very few, if any correlations between parent and teacher perceptions of child interactional skills. Again, this lack of correlation may be the result of the measures tapping different aspects of child-environment interactions.

5. Correlation of selected HOME, conceptual, and behavior scores. Selected subtests of the HOME (H1: Stimulation through toys, games and reading materials; H2:Language stimulation; H4: Pride, affection and warmth; H5: Stimulation of academic behavior; and H6: Modelling and encouragement of social maturity), the Parenting Stress Index (P2: Adaptability; P3: Acceptability; P4: Demandingness; P5: Mood; P6: Distractibility/Hyperactivity; and P7: Reinforces Parent), Kindergarten Survival Skills (K1: Independent Task Work; K2: Group Attending/Participation; K3: Following Class Routine; K4: Appropriate Classroom Behavior; K6: Direction Following; K7: Social/Play Skills; K8: Functional Communication), the Joseph (J1), the Minnesota Preschool Inventory (M3: Expressive Language; M6: Letter Recognition; M9: Hyperactivity), the CIRCUS (C1: Think it Through; and C2: Numerical Concepts), the Vineland Adaptive Behavior Scale (VC1: Communication) and the PPVT-R (PPT) were submitted to a correlational analysis. For those instruments where only some subtests were chosen (i.e., HOME, PSI, KSS, MPI, and VABS), the selection decision was essentially intuitive, based on manipulation of the data in testing hypotheses

and observation of significant previous correlations or significant differences between "High" and "Low" groups. The purpose of this correlation was to determine the existence of any relationships between/among measures of conceptual and socioemotional development. In the discussion below, only those correlations which were significant at the .001 level (r>.3799) and which elaborate on previous results will be mentioned. Table 23 (Appendix D) is a summary of this analysis.

Mothers' perceptions of hyperactivity/impulsivity were negatively correlated with higher levels of stimulation through toys, games and reading materials, with language stimulation, with pride, affection,and warmth, and with modelling and encouragement of social maturity in the home environment. Teachers' perceptions of impulsivity/hyperactivity were negatively correlated with pride, affection and warmth and with modelling and encouragement of social maturity in the home. There was a positive correlation between mothers' perception of children's hyperactivity across measures and their perception of children's acceptability and moodiness. There was also a positive correlation between mothers' and teachers' perception of hyperactive/impulsive behavior. Both mothers' and teachers' perceptions of hyperactive behavior were negatively correlated with conceptual development as measured by their respective perceptions of letter recognition and communication development and by the individually administered measures.

Children's self-concept was positively correlated to social/play skills in the classroom situation. It was also positively correlated to higher levels of stimulation through toys, games and reading material and stimulation of academic behavior in the home situation. Finally, it was positively correlated to the mothers' perception of letter recognition skills, and to individually administered measures of conceptual development.

Mothers' perception of children's acceptability was positively correlated to higher levels of language stimulation, to pride, affection and warmth, and to modelling and encouragement of social maturity in the home situation. Concomitantly, mothers' perception of children's lack of moodiness was positively correlated to higher levels of language stimulation and modelling and encouragement of social maturity in the home situation.

Children's ability to follow class routine was positively correlated to modelling and encouragement of social maturity in the home situation. Their ability to follow directions was positively correlated to both language stimulation and the modelling and encouragement of social maturity. Both of these skills, along with the children's ability to engage in appropriate classroom behavior, were positively correlated to individual measures of conceptual development and to the mothers' and teachers' perception of the level of development of communication skills.

In summary, in this study, there are strong positive correlations between/among the amount of language, interactional and academic stimulation in the home situation and lesser degrees of hyperactivity/impulsivity in children as well as better self-concept development, and more highly developed conceptual skills in children.

D. Conclusions

There is strong support for the contention that the median split of the sample in this study on the basis of HOME total scores resulted in two distinct groups in terms of the amount and type of interaction and stimulation experienced in the home situations. The results of this study generally tended to offer support for the hypotheses which were tested. Specifically, children from homes with higher levels of parent-child interactions and stimulation were significantly more likely to score higher on individual measures of conceptual development and self-concept than were children from homes with lower levels of stimulation/interaction. In addition, these children were significantly more likely to be perceived by mothers and teachers as having higher levels of conceptual development and as being less stressful, less hyperactive, more mature and as being able to follow the directions and wishes of others. Both the children themselves and mothers perceived that children from homes with higher levels of stimulation/interaction had better socioemotional development than did children from homes with lower levels of stimulation/interaction. One of the important findings was the strong relationship between children's self-concept and conceptual development.

The one hypothesis in the current study which was not supported was that there would be no relationship between socioeconomic level and levels of stimulation/interaction. In fact, homes with higher levels of stimulation/interaction did have significantly higher SES levels. However, when SES was controlled, the significant differences between the groups were still observed with a few minor changes in power. Thus, it would appear that for the current sample, the amount and types of interaction/stimulations in the homes were more important factors in conceptual and socioemotional development of preschool children.

The final section of this thesis will discuss the results of this study in relation to similar and/or related research. Specific attention will be given to the implications of the current study in the areas of conceptual and socioemotional development. Some of the limitations of the study will also be discussed, specifically sample bias and measurement error, the possible effects of daycare and/or nursery school, and the effects of teacher-learner interactions. The results of this research also point to the need for future research and for intervention with the children identified as possibly being "at-risk" in the current study.

CHAPTER V

DISCUSSION

A. General Discussion of the Results of the Current Study:

The literature on the assessment of preschool children does not contain a significant amount of information on family assessment despite the known contribution of the family to the child's development and adjustment (Wilson, 1986). Concomitantly, research on the development of the child at risk for academic and/or socioemotional difficulties has been criticized for the tendency to assess the child's behavior/performance in various skill areas rather than the actual processes within the system(s) in which the child interacts (Minuchin, 1987).

Transactionist/cognitivist views of cognitive development contend that intelligent behavior is comprised of largely genetically determined native ability and largely acquired cognitive functions. These cognitive functions include operations, processes, principles and strategies as well as nonintellectual variables such as motivation to learn, work habits, and attitude to learning (Haywood & Switzky, 1986a, 1986b;

Sternberg, 1984). Thus, in cognitivist approaches, the child's interactions with the environment are of vital importance to continuing development.

The literature review in the second chapter of this thesis stressed how important the preschool years are to intellectual growth (Bruner, 1987; Wright, 1981). It is during these years that children develop from being manipulators of concrete objects to becoming manipulators of relationships and ideas (Vygotsky, 1962). The home environment is of the greatest importance during these formative years because of the natural limitations of physical and cognitive development and the dependency on others for physical care, nurturance, and stimulation/interaction.

The main purpose of this study was to explore the relationships between/among different aspects of the child's home environment and concurrent development in specific conceptual, self-concept and socioemotional areas. In order to conduct these explorations, it was first necessary to measure different aspects of the child's home environment. One of the assessment measures used in the current study, the HOME inventory, was designed as a measure of parent/child interactions and the level of stimulation within the primary environment. There was a highly significant difference on this measure in the homes in the sample studied. Parents in homes which rated higher on the total Home score were significantly more likely to provide stimulation through toys, games, reading material and language interaction, to provide an environment which was safe, clean and conducive to development, to stimulate academic behavior, to indicate pride, affection and warmth toward their children, to model and encourage social maturity, to provide variety in stimulating experiences, and to use less physical punishment than were parents in homes which rated lower on total HOME scores.

There was also a relationship in the current study between maternal age and education and the amount and type of stimulation and interaction in the home. Generally, younger mothers, and mothers with less education tended to provide lower levels of stimulation/interaction than did better educated mothers. This supports similar findings from previous research (e.g., Brooks-Gunn & Furstenberg, 1987; Coll et al., 1987; Palacios, 1986 [cited in Goodnow, 1988]; Ramey & Campbell, 1987).

An informal checklist of specific observed interactions in the home situation also indicated a relationship between the level of HOME scores and observed interactions. Lower HOME scores were significantly related to more parent-generated negative physical contact and reprimands, and less eye contact than were higher HOME scores. Other researchers have also suggested that families in distress are often characterized by higher levels of negative social stimulation, and negative and/or coercive reinforcement loops (Kazdin, 1987).

In the current study, there was a trend toward significant relationships between lower HOME scores and less parent-child conversation. It has been suggested that lower levels of verbal interaction in the home may be contributing "hazards to development" (Marjoribanks, 1979). Discussion in the next subsection of the results of the analyses completed on children's conceptual development will indicate that there was also a relationship between lower verbal interactions in the home and children's lower levels of conceptual development an receptive vocabulary.

1. Cognitive competence. One of the specific purposes of this study was to explore relationships between levels of stimulation/interaction in the home and concomitant conceptual development in specific conceptual areas. Results indicate that children who come from homes with higher levels of stimulation/interactions scored significantly higher on individually administered measures of receptive language, numerical concepts, and problem solving than did children who came from homes

with lower levels of stimulation/interaction. These findings are consistent with those of previous researchers (e.g., Alberman, 1973; Bradley & Caldwell, 1980, 1984; Bradley et al., 1988; Schaefer & Edgerton, 1985).

One of the roles of parents in these early years is to give children the language to describe new behavior (Snow, 1986) and to stimulate conversation that encourages the manipulation of ideas (Hunt, 1972). Children from homes with higher HOME scores also tended to have homes with higher degrees of parent-child conversation. There was also a relationship between higher verbal interactions and higher levels on conceptual development. As has been stated previously, other researchers have also found a strong relationship between parental verbal interaction/teaching and the development of children's cognitive competence (Pettit et al., 1988; Sigman et al., 1988).

Previous research has revealed that parent's ratings of the amount of reading material available to the child is closely related to both interest in school and later academic performance (Bradley & Caldwell, 1984; Simner, 1989). In the current study, the provision of stimulating toys, reading material and games, and the willingness of the parents to stimulate language appeared to be two of the most important of the factors related to conceptual development. It has also been argued that preschooler's knowledge of the alphabet is one of the best predictors of later academic success and that parents are able to give an accurate assessment of this knowledge (Simner, 1983, 1989). In the current study, mothers' estimate of their children's alphabet knowledge had a significant relationship to children's scores on measures of conceptual development in the specific areas assessed. As would be expected, this alphabet knowledge was also related to home environments which stimulated academic behavior and which modelled and encouraged social maturity. In the classroom situation, this knowledge was related to the ability to work independently on task, to attend and participate in group situations, to follow classroom routine, to follow directions, and to behave in an appropriate manner in the classroom. Thus, it would appear that children's ability to function in an adaptive manner in the classroom situation, in terms of both behavior and concept development, is related to home environments which encourage learning/academic behavior and age-appropriate social maturity.

It has been argued that children develop from one stage to another as a result of interest and sustained spontaneous activity which produces accommodation and assimilation of already acquired and newly learned knowledge (DeVries, 1987). It could also be logically argued that children who do not experience modelling and/or reinforcement of sustained interest and learning behavior may not be as quick to assimilate and accommodate new information and thus may tend to be somewhat "delayed" in stage development. Thus, the modelling and stimulation of academic and socially appropriate behavior may be important precursors to early academic "success." Certainly, in the current study there was a very definite relationship between stimulation and modelling of learning and academic-type behavior in the home situation and the level of the children's conceptual development in number concepts, problem solving, and receptive and expressive language. Clinical observation of the children as they approached the conceptual tasks administered in the one-to-one situation also revealed the vast differences in concept development among the children. Some of them had quite obviously become comfortable with more abstract thinking and were able to grasp the nature of presented tasks quickly and easily. Others appeared to be at a "transition stage" and seemed to grasp what the tasks were requesting of them after a few initial responses. Some children were clearly still thinking at a very concrete level and became either bored or frustrated with (a) task(s) they found incomprehensible. The reactions of some of the children to the individual assessment situation, as well as to other aspects of the study, are described in the postscript to the discussion section (see p. 145).

There may be differences between various subcultures (including SES groups) in the learning of different concepts (Stanley, Charlesworth, Looney & Ringuest, 1987). For example, children entering school display different degrees of competence in their language development and ability to communicate (Menyuk, 1976). There is now some evidence to suggest that communication skills strongly influence the child's interactions with teachers and peers (Ladd & Price,1987; Paget, Nagle & Martin, 1984). In the current study, there were significant relationships between the children's adaptive communication as perceived by the teacher and their ability to work independently on task, to attend to and participate in group activities, to follow classroom routines and directions, and to behave appropriately in the classroom. However, whiles mothers' perception of children's expressive language was correlated with teachers' perception of adaptive communication, mothers' perceptions did not correlate significantly with the children's classroom behavior. One possible reason for this finding may be that the measure of mothers' perception was based on the children's expressive language, while the measure of the teachers' perception was based on both expressive and receptive communication. In other words, some children may not have developed the receptive vocabulary necessary to function in a classroom situation.

Children in this study who came from homes with higher levels of stimulation/interaction also functioned significantly higher than their peers from homes with lower levels of stimulation/interaction in expressive language, comprehension, memory, number comprehension, immaturity, and behavior problems as perceived by mothers, and in communication, socialization and motor skills as perceived by teachers. The concept of adaptive behavior generally has three restrictions, i.e., adaptation is behavior not ability, the behavior must be performed, and it must be performed by and not for the individual (Schmidt & Salvia, 1984; Snyder, 1985; Sparrow et al., 1985). Adaptive behavior is age- and (sub-) culture specific, and at the preschool level includes communication, self-help and sensorimotor skills (Taylor, 1985). Thus, because we are looking at behavior, it is possible for the individual to have different "levels" of adaptation, depending upon the environment. While it may be fairly easy for the child to adapt to different physical environments, adaptation to the social demands to different physical environments may be more difficult

(Schmidt & Salvia, 1984). This may be particularly true for the young child who has not had any significant amount of different social experiences. It would appear the children in the current study from homes with higher levels of stimulation/interaction may have tended to behave in fairly similar ways in both the home and the school environment, possibly because they had experienced a greater variety of stimulating situations. Yet another explanation for this finding may be that the language patterns of some of the mothers in homes with lower levels of interaction/communication were a combination of English and French grammatical forms and included a considerable amount of "slang". The behavior of their children tolerated by these mothers was also quite different than that tolerated by mothers in homes with higher levels of stimulation/interaction. It is possible that these mothers may also have had different expectations and levels of acceptability for their children's communication skills than did teachers.

It has also been suggested that parents' interactions with their children reflect the parents' beliefs about cognitive development (Miller, 1988). There is a relationship between parental level of education and their awareness of the importance to their children's cognitive development of family interactions and stimulating play materials (Schaefer & Edgerton, 1985;

Turnbull et al., 1986). In the current study, mothers' age and level of education also tended to be related to the level of HOME scores and to reprimands. In other words, in the current sample, there was a tendency for younger mothers with a lower education level to provide less stimulating environments and for these mothers to reprimand their children more. The children of these young, less educated mothers may be at risk for educational difficulties (Washington & Oyemade, 1987; Whitman et al., 1987). This is particularly true when the relationship(s) between/among conceptual, self-concept and socioemotional development is (are) considered.

Interestingly, there was no significant difference between children from homes with greater stimulation/interaction and children from homes with lesser stimulation/interaction in the development of self-help skills, either in the home situation as perceived by the parent or in the school situation as perceived by the teacher. In general, girls tended to be perceived as having better developed self-help skills than did boys. This finding was not totally unexpected, particularly given the low level of awareness of gender equality in the city in question.

When children are viewed from family systems theory, a basic tenet is that interactional patterns within the family are circular (Minuchin, 1985). Thus, problems in a child's development may interact with parent behaviours to produce additional problems (Wilson, 1986). In the current study, there was a significant relationship between mothers' perception of children's acceptability, moodiness, and degree of distractibility/hyperactivity and both the amount of language stimulation and the degree of modelling and encouragement of social maturity which they gave their children. Acceptability and the degree of distractibility were also significantly related to the degree of pride, affection and warmth expressed. In other words, it would appear that the happier, more acceptable and appealing, and less distractible the mothers in this study found their children to be, the more likely the mothers were to spend time interacting positively with them.

2. Self-concept development. A second specific purpose of this study was to examine the differences in the level of stimulation/interaction in the home and the concomitant level of self-concept and socioemotional development. It has been hypothesized that humans have an inherent need for a coherent self-concept which allows them to "make sense of", and deal effectively with, the external world and their own behavior (Bereiter, 1985). The development of self-worth and self-concept involves

processes of attachment, self-identity, self-regulation and play (Bagnato & Neisworth, 1987). The individual develops self-worth through social modelling of behaviours that are valued and reinforced by those with whom they are interacting (Bandura, 1971). Young children generally tend to interact most frequently with their parents; thus, it is assumed that the parenting process is a major factor in the development of self-concept (Bagnato & Neisworth, 1987).

In the current study, children from homes where there were higher levels of stimulation/interaction had significantly higher scores on individually administered measures of self-concept and socioemotional development. There was a significant relationship between children's self-concept and the amount of stimulating material and stimulation of academic behavior in the home. These results support a speculation by Anderson and Adams (1985) that the significant correlation between perceived self-competence and achievement in their study may have been a reflection of academic home orientation in their sample. In the current study, there was also a significant relationship between the children's self-concept and the children's expressive language as perceived by the mother, receptive vocabulary, problem solving skills, and numerical concept development. In other words, it would appear that children who came from homes which emphasized stimulating material and academically oriented activities, and children who had developed stronger expressive vocabulary, receptive vocabulary, problem solving skills and/or numerical concepts had also developed greater positive self-concept. This interpretation would support contentions that self-concept is an important factor in cognitive development and achievement (Shavelson & Bolus, 1982). However, it must be cautioned that the individual measures of socioemotional development were taken in the school setting immediately after the completion of more cognitively oriented tasks. Thus, although the measures relate to all aspects of self-concept, children's responses may have been biased as a result of their perceptions and feelings about their performance on the cognitive tasks.

Past research has indicated that there is only a weak relationship between young children's perception of self-competence and their achievement on academic readiness tasks (Anderson & Adams, 1985). It has been argued that young children may not be influenced by failure since they may not attribute failure to a lack of ability (Ruble & Rholes, 1981). Rather, they may regard failure as an observable event (Harter, 1982). A meta-analysis of the studies which examined the relationships between achievement and self-competence measures indicated that children tend to develop a stronger awareness of their own abilities over time (Hansford & Hattie, 1982). However, even young children may have an awareness that they are not equally proficient in all domains. For example, Anderson and Adams (1985) used a measure of self-competence similar to that used in the current study [The Pictorial Scale of Perceived Competence and Social Acceptance for Young Children (Harter & Pike, 1984)]. Anderson and Adams found a significant and moderate (r=.28, P<.01 to r=.35, P<.001) relationship between self-perceived cognitive competence and measures of academic readiness, although this relationship was not evident for self-perceived physical competence.

Yet another specific purpose of this study was to examine the relationships between/among homes with different levels of stimulation/interaction and concomitant ability to adapt and interact in different situations with different individuals. Since measure of this adaptive/interactive ability were obtained through behavior rating scales, the measure is actually one of the rater's perception of adaptive/interactive ability. Interest in factors which help the child to adjust smoothly to the school environment has increased in recent years (Ladd & Price, 1987; Simner, 1983, 1988; Skarpness & Carson, 1987). The ability to relate positively with others is one of the factors which appears related to successful adjustment (Simner, 1983, 1988; Skarpness & Carson, 1987). In the current study, and from the perception of the teacher, children from homes with high interaction/stimulation had significantly greater socialization skills, including interpersonal and coping skills, and play and leisure time skills than did children from homes with low interaction/stimulation.

Researchers have also found that attention span/distractibility and communicative competence scores were predictive of adjustment to the academic requirements of kindergarten (Simner, 1983, 1988; Skarpness & Carson, 1987). They have suggested that the child who is communicatively competent is better able to understand directions and rules and thus better able to adjust to the demands of the classroom. Halberstadt and Hall (1980) found that children who were less communicatively competent were viewed by teachers as being intellectually slower. Skarpness and Carson (1987) suggested that these teacher perceptions, in combination with skill deficits, may result in lower self-esteem, more limited social relationships, and poorer academic performance in the child whose communication skills are delayed.

As has already been discussed, both receptive vocabulary and expressive language were significantly related to self-concept in the current study. In addition, numerical concept development, problem solving skills, and receptive vocabulary were significantly related to teachers' perceptions of the ability to work independently in the classroom, the ability to follow directions, and the ability to attend and participate in group situations. Receptive vocabulary and numerical concept development were also significantly related to social and play skills and to functional communication. Problem solving skills were significantly related to the ability to follow class routine. Thus, in the current study there was a relationship between children's concept development, including cognitive competence, and their teachers' perception of their ability to adapt to the demands of the classroom situation.

It has been hypothesized that patterns of antisocial behavior are a result of early interactions (Forehand & McMahon, 1981) and that these patterns tend to extend into at least late childhood (Patterson et al., 1989). In the current study, there were also significantly more children with immature and hyperactive behavior and behavior problems as perceived by the mother in home with lower stimulation/interaction scores than in homes with higher interaction/stimulation scores. Similarly, negative mother-instigated physical contact and general reference to her child tended to be related to more inappropriate behavior. A review of the literature on dysfunctional mother-child interactions led Dumas (1989) to conclude that there is a consistent association between dysfunction and environmental stressors. Dumas suggested that the association may be due more to stress-induced deficiency in maternal attention rather than to an absence of parenting skills. Some mothers, living in the midst of stressors, may not be in synchrony with the cues offered by their children's behaviours. In the current study, there were no measures taken of parental stressors, apart from, possibly, SES level and single-parent status. There were no significant relationships between these measures and measures of mother-child interaction.

It has also been suggested that antisocial children come from families lacking positive parent involvement and where discipline is harsh and inconsistent (Patterson et al., 1989). In the current study, mothers in homes with low interaction/stimulation were significantly more likely to engage in physical punishment, to express less pride, affection and warmth,and to provide more reprimand with no consequence than were mothers in homes with high interaction/stimulation. Children in these homes hay not be experiencing the modelling of social behaviours that are valued and reinforced by significant adults (Bandura, 1971). Similarly, as a result of inconsistencies in cause and effect relationships, these children may not be learning to decentre and, thus, to develop acceptable social skills (DeVries, 1987). If this is indeed the case, these children may be at significant risk for later behavior problems.

Within family systems theory, it is posited that social, emotional and/or physical problems in the preschooler's development may interact with parent behaviours to produce additional problems (Wilson, 1986). In other words, the child's behavior is affected by the environment, but in turn, also influences the environment (Bandura, 1971; Foster & Cone, 1980). In the current study, there were significant relationships between children's motor difficulties (e.g., lack of coordination) as perceived by mothers and the amount of positive physical and eye contact the mothers directed at the children. These children may not be receiving the amount and/or type of interactions which will help them to develop confidence and, likely, therefore, greater motor fluency.

There seems to be evidence that there is a significant reorganization of behavior which occurs about four or five years of age (Schuler & Perez, 1987). Schuler and Perez suggested this reorganization of behavior is a reflection of self-regulatory skills which begin to emerge at this age. Furthermore, if these skills are related more to nurture than to biological forces, then the importance of nurture could help explain the importance of stimulations/interactions in developmental outcome. Dumas (1989) hypothesized that the lack of attention and self-regulation displayed by some children may be mediated by the mother's response repertoire which is at odds with sustained attention and self-regulation. A study of the parenting styles of parents of elementary school children by Grolnick and Ryan (1989) indicated that parental support of autonomy through structure and consistent contingencies is positively related to self-regulation skills. In the current study, children from homes with lower levels of stimulation/interaction tended to score significantly higher on measures of distractibility in both the classroom situation as perceived by the teacher, and in the home situation as perceived by the mother. These children may be at risk for academic difficulties, since it has been hypothesized that attention/distractibility is one of the better predictors of early school achievement (Horn & Packard, 1985; Simner, 1983, 1988).

Finally, it was mentioned in the literature review that maternal reinforcement of "correctness" rather than "effort may result in the child avoiding challenging tasks in order to ensure ongoing reinforcement for correct performance on tasks which have already been mastered (Ames & Archer, 1987). While no direct measures were taken relating to this variable, clinical observation of one child, in particular, supported this finding (see p. 146, Adam).

3. The effectiveness of SES as a predictor of children at risk. A final specific purpose of this study was to explore any relationship between levels of stimulation/interaction in the home and socioeconomic level. Until recently, it was thought that socioeconomic status was a valid and powerful predictor of later academic and/or socioemotional difficulties. However, more recently it has been understood that it is the correlates of poverty, such as stress, emotional abuse, and feelings of helplessness, that may be the important factors in the development of children at risk.

The Blishen measures of SES in the current study correlated at a significant level with total HOME scores. However, as has been indicated previously (e.g., Henderson, 1981), SES has been found to account for only slightly more than 25% of the variance in relationships between SES and measures of cognitive development. Among the eight subtests of the HOME, there were significant correlations between SES and measures of stimulation through concrete materials, and variety of stimulation. In both cases, SES again accounted for only slightly more than 25% of the variance. These two particular areas of stimulation are ones which would seem to be quite naturally associated with parent purchasing power. The subtests measuring parent stimulation of academic behaviour, and modelling and encouragement of social maturity also correlated significantly with SES but did not account for a significant percentage of the variance. There was no significant relationship between SES level and the types of interactions observed during the home visit. Thus, while there is a relationship between the amount of stimulation/interaction in the home environment and SES in this sample, effects of this relationship are of low to moderate magnitude. One finding which did support previous research (e.g., Coll et al., 1987; Washington & Oyemade, 1987) was a correlation between mothers' marital status and SES. Single mothers tended to have lower SES as a result of having only one income, a lower paying job, or unemployment.

When the effects of SES in the current study were covaried out of the analyses of conceptual and socioemotional differences between the children from homes with high levels of stimulation/interaction and children from homes with low levels of stimulation interaction, results were still significant. This would indicate that, at least for the sample in this study, socioeconomic status would not be a useful predictor of children who are possibly at risk for later academic and/or socioemotional difficulties. In contrast, measures of interactions and the level and types of stimulation within the home may be a very useful predictor.

There has been, and unfortunately continues to be, a stereotypic association between low SES levels and lower academic achievement. For many years, it was assumed that children from lower SES homes were automatically "at risk" for academic failure. However, more recent research has examined different correlates of poverty which are more valid predictors of lower academic achievement. In the current study, factors such as the amount of language stimulation, the degree of stimulation of academic behaviour, modelling and encouragement of social maturity, and the degree of pride, affection and warmth expressed toward the child were more valid indicators of the level of conceptual, self-concept and socioemotional maturity than was SES level.

4. Summary. This study was undertaken to explore the relationships between and among home environments, specific areas of conceptual, self-concept and socioemotional development. Results indicate that there were significant differences between children from homes with high and low levels of stimulation/interaction. Children from homes with lower levels of

stimulation/interaction were more likely to have less well developed expressive language skills, adaptive communication skills, socialization skills, motor skills, receptive language skills, numerical concepts, and problem solving skills. They were also more likely to have more behaviour problems and to be more hyperactive/distractible in both the home and the school environment. Homes with lower levels of stimulation were also likely to be associated with children with a lower self-concept. Past research has indicated that children who have problems with attention/distractibility, internalized behaviour problems and/or communication difficulties may be at risk for academic failure. Results of this study indicate a strong relationship between such problems and lower levels of appropriate interaction/stimulation within the early home environment. However, the relationship between SES and conceptual, self-concept and socioemotional development was not significant.

Early identification of children who are likely at risk for educational failure is meaningless without follow-up in the form of intervention (Leigh, 1983; Tramontana et al., 1988). In the current sample, there are enough children at serious risk, particulary in terms of conceptual and self-concept development, to point to the need for intervention at the kindergarten level.

In order to bring "life" to the results of this study and to stress the very real and definite need for follow-up intervention, my interactions with some of the children in the current study have been described in vignettes in the following section. The purpose of these descriptions is to emphasize the vast differences in experiences of this sample of students and the disadvantage at which some children enter our schooling system, and to put a "face" to some of the numbers by which we tend to operate.

5. Postscript. The children in my study came to be much more to me than "sources of numbers". Most of them were truly engaging little individuals. All of them added another facet to my understanding of four-year-old children. The following section contains short vignettes which give a glimpse into some of their lives. Children chosen for the vignettes were those who stood out as extremes, either for personal characteristics of because of the situations in their lives, or because they exemplified some of the findings from the research.

The reader must keep in mind two very important facts when reading these vignettes. Firstly, these verbal pictures were written at the suggestion of one of the researcher's committee members after all data had been analyzed. This suggestion came about as a result of the researcher's account of the methodology of the study. The children described were indeed those who had stood out most in memory. Recall was aided by referring back to initial clinical and descriptive notes which had been made by the researcher on the face sheets of the assessment devices used in the home visits and in individual interaction with each child. The second fact which must be kept in mind is that many of the words used in these vignettes are highly emotive and do reflect some of the values and biases of the researcher. These words were chosen purposefully by the researcher to help create a more vivid image for the reader. In other words, these vignettes are emotionally charged descriptions completed after the research was completed in order to add "faces" or "reality" to the data collected. Their conception and completion were accomplished after the data had been collected, scored and analyzed and, thus, in no way biased data collection, scoring or analyses.

a. Adam

Adam is a "fortunate" young man. He is the only child of well-educated parents who dote on him. He lives in a comfortable house in a quiet residential area considered to be one of the most desirable in the city.

Adam's mother obviously adores her son, and seems to essentially gear her world around her perception of his needs. He has an abundance of toys, with a nice balance between those intended for fantasy exploration and those designed for conceptual stimulation. Adam's mother plainly spends a great deal of time interacting with her son, and it is evident that while he is very comfortable in the presence of adults, he expects those adults to also make him the centre of attention. In conversation, Adam presents himself as being very mature for his age. He has a well-developed vocabulary and speaks in complex language patterns. My interview with Adam and his mother took place on the floor of his playroom and was frequently interrupted by either Adam or his mother as he attempted to construct the objects in a tinker toy diagram.

Although his mother and father both work full time, they usually arrange their schedules so that one of them is able to have lunch with Adam when he gets home from junior kindergarten near noon. He spends a small portion of some afternoons with a babysitter whom he has had since his mother returned to work after his birth. Adam's mother's job allows her the freedom to have Adam with her as she works at home some days.

Adam's home is immaculate. Everything, from the floor to the faucets on the sink, sparkles. Each object has its obvious place, and there is not even a speck of dust out of place. Adam is allowed to play, but only in his play room, and with only one toy at a time.

Although I have known Adam's mother for a number of years, in a situation where she was the "professional" and I was the mother, she is obviously very anxious about my visit. She asks a great many questions when I make the initial call to arrange for a home interview, and a great many more questions prior to my beginning to read the questionnaires. Her last statement before we begin is very revealing..."I hope he will do alright on these. I would really hate to be embarrassed."

Adam's teacher later reports that he has had a very difficult time adjusting to the routine of the junior kindergarten classroom. Although he is very verbally advanced and enjoys discussion and stories with adults, he is very reluctant to attempt new tasks and becomes distraught when he feels he has made a mistake. He does not interact well with the other children in the classroom, although he is functioning better in this area than he was at the beginning of the school year. He often displays very anxious behaviour, e.g., when he knows that he is being picked up to go out for lunch with one of his parents and is afraid he will not be ready. At these times, he can become tearful and whiny.

During my first session with Adam, he willingly attempts initial tasks. However, he is astute enough to know that he has not understood some of the concepts in the problem solving task and, therefore likely "got them wrong." I reassure him that he is making a splendid effort and that he really knows how to use his thinking skills. Despite this reassurance, Adam becomes very agitated and is allowed to return to his classmates.

I continue with my assessments of other children in the class, and each successive child is enthused upon his/her return to the classroom. Eventually, I have difficulty keeping the children out of the coat room where I am working until it is their turn. All except Adam. He remains as far from the coat room as he can.

On my next visit to the classroom, many of the children are eagerly awaiting their turn and/or their next turn. Not Adam. He refuses to accompany me that day. And the next day. When he finally does decide to come with me when I ask him, I suspect it is because of his mother's insistence. We had a chance encounter one day and she had inquired about Adam's performance. I had made light of his unwillingness to come with me and possibly "make another mistake." On my next visit to the school, Adam reluctantly drags his feet after me. His performance, while still above the average for that task, is far below what I know he was capable of doing. Once tasks became slightly difficult he consistently indicated that he "didn't know."

In my subsequent review of the relevant literature before beginning to write my thesis, I was struck by the research which points to the effects of maternal reinforcement of "performance". This little boy is an "n" of one. Clinical observation and actual individual assessment scores point to his well-developed conceptual skills. However, his socioemotional and self-concept scores, while above the average, were lower than would be expected from a child who has had the amount and types of interaction/stimulation and the conceptual development he has. His is very frightened to "take a chance," and becomes flustered and confused by the anxiety which results from perceived failure. Without some intervention which will change the patterns of "ego involvement" and tendency to reinforce performance that Adam's mother now displays, this bright young child may be at significant risk for later socioemotional and/or academic difficulties resulting from possible "learned helplessness."

b. Brent

Brent is a small boy whose pinched face can light up in a glowing smile when he is pleased or excited. This is exactly what happens when he opens the door and recognizes the "lady who talks to me at school." He bounces into the small rectangular living room where his mother sits with her leg in a cast. After removing my snowy boots, I follow somewhat more slowly, carefully picking my way between puddles of yellowish water and little piles of dog excrement.

Brent lives near the river in the inner part of the city. The decaying residence where his second-floor walk-up apartment is located faces big petroleum storage tanks. There is no outer door on the house, and the stairs leading to the small landing are narrow and cold. The apartment is very small and cramped. It is far from clean and each room is cluttered and untidy with clothing, toys and household objects strewn about. Although I have learned to dress very warmly for my visits to the inner city homes, I am not prepared for the cold draft whistling through the broken window pane at the end of the sofa. By the conclusion of the interview, I have begun to shiver slightly, and writing with my cold fingers is difficult. Brent and his little sister are dressed in light cotton slacks and short sleeve polo shirts. They do not wear socks or shoes.

Brent's mother is pleasant and most cooperative. She interacts very little with Brent, stopping only to scold him when he tries to retrieve his pencil from the grasp of his little sister and makes her cry in the attempt. The cumbersome cast surrounding her whole leg more-or-less compels Brent's mother to remail sitting propped on the sofa for most of the day. She says she has serious knee problems and obviously is not working at the present time.

Mother's current boyfriend is in and out of the apartment. He never enters the room where the interview is taking place, but scowls each time he passes the doorway. Brent's behaviour is almost remotely controlled by the presence of this man. When he is not in the apartment, Brent is whiny, loud and verbally aggressive with his mother and sister. The moment the wiry dark-bearded man opens the outer door, Brent becomes quiet and subdued. When he was once caught unaware and was harshly reprimanded by the man, he sat stiffly in the overstuffed arm chair, hardly moving a muscle until the man left again.

Brent is eager to show off his few toy, most of which are broken, and none of which are designed for academically oriented stimulation. There are no books or newspapers visible in the home. Brent's speech is unclear, and syntax and vocabulary are immature. However, he is thirsty for vocal interaction, frequently picking up on one word of a question directed at his mother and redirecting it at me. Yet, he is not really interested in the response unless it is accompanied by enough physical animation to capture his interest. He seems to approach life like a bee searching for honey, flitting from one object to another, never settling long on any one thing.

Brent's teacher says he fits into the class fairly well, although his high-pitched voice can be irritating. He does have a lot of difficulty with class routine and group attending and with independent task work.

Brent is very eager to accompany me to the coat room at the back of the classroom. He also willingly attempts all tasks given to him. However, his attention quickly wanders and he is very much prone to impulsive guessing. Bren's self-concept is adequate, although both he and his mother perceive his socioemotional development to be slow. In contrast, his teacher perceives his socioemotional development to be about average. Brent's scores on all measures of conceptual development are near the lowest end of the range. His mother and his teacher perceive of him as being hyperactive, and his mother feels he is demanding and has behaviour problems.

Brent is a little boy who is at obvious risk for academic failure. Although his self-concept is currently quite adequate, it is suspected that this will begin to change quite rapidly as his school career progresses. Brent does not present as slow, or even as attention deficit disordered. Rather, he presents as a child who has not experienced stimulation and interactions which are geared to foster sustained attention and thinking. Brief interactions with him in the individual assessment situations point to an eagerness to learn and to be able to "make sense" of the world.

c. Carl

Carl is a quiet little boy whose serious face rarely breaks into a smile. He lives in the lower half of a house whose out appearance is dark and foreboding. Sheets cover the windows in the front and along one side. All the other windows are boarded up. An empty dump truck is parked in the rutted driveway. There are a few other houses on the dead-end street in what is essentially a light industrial area.

My visit to Carl's home is the first of my study. His mother sounded very pleasant and agreeable during the telephone interview, and since she does not work, she was agreeable to an early morning interview. However, I am aware that I am a stranger and that the questions I will ask are an intrusion. The first glimpse of the house does not ease my anxiety. As I approach the door, I can hear the television blasting. I knock, at first in the "normal" manner and, finally, much more loudly. The door is opened by a surly-looking man who grunts at me and yells at Carl's mother that "the broad from the school is here."

Carl's mother leads me through the tine living room filled with a blanket-covered sofa, a bare coffee table and an old-fashioned console television. We enter a small alcove with a table and chairs, obviously used for eating. On the way by, I glimpse a bedroom literally filled with wall-to-wall beds. A few broken dolls and trucks lie pathetically on the minuscule area of floor space. The walls are bare of even paint, and you can see the nail heads in the peeling plaster board. In a few places there are jagged holes in the plaster, some bigger than others. The alcove is separated from the blaring television by a wall with an open "picture window." The apartment is very dim.

Carl's mother softly asks me if I would like some coffee. I have difficulty hearing her over the noise from the television and find lip reading in the dingy light difficult. She sits facing me, but with one side of her face averted so that I cannot see it. Carl and his younger sister and brother gather around curiously when I first enter and make an attempt to explore my pocketbook. The accept a glass of milk from their mother and sit at the table, picking at the ashtray, matches and cigarettes until the man, mother's current boyfriend, loudly demands that they come and join him on the sofa. The children spend the rest of the interview initially fighting loudly in one of the other rooms and, later, sitting quietly beside the man who is holding them firmly on the couch.

Carl's mother responds willingly to all my questions, although it is necessary to rephrase some of the more complexly worded ones for her. Each time I attempt to speak more loudly to be heard over the television, the volume is increased perceptibly. About half-way though the interview, when the children are forcibly seated beside the man, I realize with horror that they are watching a hard-core pornographic movie. As the interview is concluding, a young woman, obviously a friend of Carl's mother, comes to the door to be greeted by the man. The young woman makes some inquiry about my presence in the house and the who begin a discussion about the "nosiness of the school" and the "stupidity" of Carl's mother for answering my questions. I can not help admire Carl's mother's courage and wonder what will happen to her once I have departed.

Carl's teacher finds him to be a very sweet and loving little boys who is most anxious to learn. He is alert and observant in the classroom, although he does have a fairly short attention span. He also has a temper when he becomes frustrated.

Carl is pleased to be one of the first in his class to accompany the lady who had come to finger paint and sing with the class last week. He is very happy to sit at the small desk and listens attentively to instructions. Although both his teacher and his mother perceive him to be hyperactive and impulsive, he attends closely to all tasks presented, and scores above the average on all conceptual tasks. He scores below the average on most of the measures of teacher and parent perception of development. His self-concept is also quiet adequate, although both he and the adult raters perceive his socioemotional development to be slow.

Carl would appear to be a very bright little boy who, despite an adverse environment, has well-developed conceptual skills and a fairly intact self-concept. One cannot help wonder, however, what the long-range effects of his chaotic experiences will be. Certainly, he has the willingness and the capability to attend for long periods to complex tasks. However, he does not appear to be using these skills adaptively. There is also the danger that apparent perceptions/expectations of others will result in a self-fulfilling prophecy. One final positive note is that Carl's mother removed herself and her children from the situation shortly after the study was completed and moved back to her home town in another province.

d. Danny

Danny's thick-lensed glasses overpower his round-cheeked face and make his dark eyes appear huge. When he is happy, an impish smile curls his lips. The house he lives in with his mother, younger brother, grandmother, grandfather, aunt and uncle faces onto a busy thoroughfare and backs onto the parking lot of a big supermarket. The house is small for so many people, although the rooms are fairly neat and clean.

As I knock on the door, I am struck by the noisy chaos within. At least three simultaneous arguments are taking place between and among the five people who briefly glance in my direction as I enter into the undersized living room. Although I had called and spoken with Danny's young mother to arrange the interview, she has forgotten that I am coming. She is quite frank in her responses to my questions, and sits giving me her full attention amidst the confusion of voices around me.

Danny is quite obviously delighted at my presence and at the attention which is being indirectly aimed at him. He speaks very little during the interview; however, he is quite physically active, unobtrusively showing me a multitude of fantasy and action toys. There are no books visible, although there is a local newspaper on the sofa.

It is evident after a few minutes that Danny and his sister do not really obey their mother very well. She makes passive attempts to discipline the children's overly active behaviour, although it is plain by her tone and manner that she is becoming angry. Danny's grandmother has a much more hostile approach to discipline. At one point, when Danny has quietly moved a chair to the kitchen sink and climbed up in order to wet a "magic, colour-changing" car, she let him know quite vociferously that she "hates his stupid behaviour." Danny's little face changes only slightly, but his immense eyes magnify unshed tears.

Danny's unemployed mother and the children have only been living with her parents for the past month this time. She has just left her latest boyfriend, who is not the father of either child. She informs me that she will be moving again at the end of the month. In actual fact, Danny attends the same class, but moves twice more before the end of the study. He has already been in three classrooms in two provinces in the first five months of his academic career.

Danny is very unobtrusive in the classroom situation. However, he is frequently reprimanded during group activities for not paying attention. According to his teacher, he tends to spend a lot of time "just staring." He is avid for the attention he knows he will be receiving as he accompanies me to the coat room at the back of the classroom and is earnest in his attempts to please. Although his mother finds him exceptionally hyperactive and impulsive, his teacher feels he is only moderately so. His behaviour in the one-to-one situation is attentive and questioning. His teacher and his mother feel that his skills are poorly developed. However, he scores at an average to above average level on measures of conceptual development. Danny and his teacher perceive that his socioemotional development is quite average. However, his mother feels he is very immature in this area. Danny has a very low self-concept.

Danny has the potential for being at risk in so many different areas. He has had no continuity of either the adults in his life, or, since he has been at school, his peers. Consistency in both of these areas is thought to be important to optimal development. Both his teacher and his mother perceive his skills to be lower than they, in fact, are. Thus, there is potential for an eventual self-fulfilling prophecy. Finally, Danny is at risk because his unmarried teenage mother has very little education (grade nine) and very little awareness of child development and appropriate expectations, and of child management techniques. She is also unemployed and subject to the stresses of poverty and unstable relationships. Of all the children at risk in my study, Danny is the one who touched me most deeply.

e. Evan

Evan was one of the children not included in my study because of his special needs. However, I had interviewed the mothers of all of the special needs children and had met with the children individually in the classroom situation in order that they not feel "left out" because of their "differentness." Evan is very severely disabled by cerebral palsy. He is gradually developing the ability to control his head so that he can use a pointer light to communicate.

Evan is a gentle boy with large dark eyes and an intelligent smile. He lives in a large, beautifully kept home in a quiet residential area in the city. He has one older and one younger sister, and, some months after the completion of the study, a younger brother. Evan is the eldest son of a very European family, and, because of his disability, is a great "disappointment," particularly to his father.

Evan's mother is quite willing to participate in the interview. She responds to questions honestly and almost with resignation. Evan is seated in a special chair at the table with us, and has a multitude of small toys and objects on the surface in front of him. His mother places his arms on the table in front of him; however, because of his spasticity, he has no control over them and they gradually slide to the edge of the table and fall helplessly to his sides, dragging many of the small objects to the floor. He has an eye blink communication signal with his mother for "yes" or"no," and responds to her direct questions. However, it is very interesting to note that her questions are very concrete and do not deal with emotions. They also do not demonstrate much imagination or understanding of the probable wants and needs of a five year old boy.

Evan's family have been given the use of a light-activated computer voice to help evan to communicate. His teacher and aide at school spend a portion of each morning developing vocabulary and head control skills with Evan. However, they have noted that the machine is returned to school most days with the same program in the same position as it was when it was sent home the previous day. I see the computer in its case by the door and ask Evan's mother about it. She indicates that she just "doesn't have time." I get the distinct impression that she feels that it is a pointless exercise.

Evan's teacher and aide have much positive feeling for him and make every effort to include Evan in the classroom activities. Every morning some time is taken to help Evan develop his skills on the language computer. The children in Evan's classroom all enjoy interacting with him, although there is a tendency to "baby" him.

Evan's eyes light up when I ask him if he would like to accompany me to the back of the classroom. He watches my face closely as I give instructions and, as physically helpless as he is, I can feel his eagerness. Evan responds by pointing the light attached to his head. He scores near average on some of the conceptual tasks and considerably lower on others. It is his responses on the items measuring self-concept that devastate me. When I verbally affirm his responses indicating that he feels he has no friends and that his parents much prefer his sisters to him, his expressive dark eyes are misted by tears.

Although severely limited in his physical movements, my interactions with Evan leave me with the impression that he has at least average intellectual capabilities. Unfortunately, at the current time, he is probably not being given sufficient and appropriate stimulation, particularly in the home situation. However, the greatest neglect that I perceive at the current time is the almost complete disregard for the feelings this little boy has about himself and others. His plight drives home the vital importance of communicative interaction.

f. Faye

Faye is a delight. She is the little girl that all mothers dream of having. She is neat without being prissy, polite and thoughtful toward others, and her little face sparkles with intelligence and happiness. She and her younger brother live with their professional parents in the new "yuppy" part of town. The houses in this older residential section are being bought up by young couples who are interested in undertaking the extensive renovations necessary to modernize them. Faye's mother does not intend to return to work until both children are in school.

Faye gets up from her nap shortly after I arrive for the interview. She shyly greets me by name and looks curiously at the papers in front of me on the table. She sits quietly having a nutritious snack while her mother and I talk, but responds quickly and appropriately when asked a question. Her mother has a very matter-of-fact attitude about Faye's behaviour and capabilities, and does not feel that anything about Faye is different than what one would expect from a child of her age. The large, sunny play room is filled with educational and stimulating toys. Faye leaves us and goes into the living room to put a story cartridge into the tape deck. She settles back on the sofa with the accompanying book in her lap, turning the pages as the plot progresses. At one point, she gets up, stops the tape and comes to stand quietly beside her mother until her presence is acknowledged. She points to a word in her book, asking her mother to pronounce it and tell her the meaning.

In the classroom situation, Faye is almost the teacher's "aide." She sits quietly during all group activities and responds clearly and appropriately when called upon. When the class is engaged in hands-on tasks, Faye quickly finishes her own work and willingly helps her classmates when she is asked. However, she does not impose assistance where it is not requested. During free-time activities, she plays harmoniously with all of her classmates. However, in contrast to the flitting movements from one activity to another which is characteristic of her classmates, she tends to stay with one activity until it is time to clean up Typically, she is one of the first to have her toys put away. Frequently, she helps her classmates clean up also before she selects a book and goes to sit quietly on the mat, waiting for the teacher to give directions for the next activity.

Faye has looked with interest as I have taken some of her classmates to work with me. When it is her turn, her enjoyment of the tasks is quite apparent and her approach is thoughtful. Fay's scores on all measures of conceptual development are significantly above the average. Her scores on measures of self-concept and socioemotional development are also high.

Faye's classmates are mostly "inner city" dwellers and many are from single-parent families. Faye and some of her classmates will go to a school offering French immersion next year. However, I am struck by the vast difference between students like Faye and their less fortunate peers. It seems to be blatantly unfair that these children whose early experiences are so opposed should be taught in the same way and should have the same expectations and measurements placed on them by the education system. I do not feel that Faye was being challenged by the junior kindergarten program. However, to provide the entire class with experiences which Faye would find stimulating would be totally inappropriate. The differences in children in Faye's classroom, in particular, points to the strong need for early intervention programs.

g. Ginny

Ginny is a bedraggled little moppet. Her medium length, straight blond hair is frequently uncombed and tangled. Her clothes are slightly too large, rarely match, and are often not very clean. Ginny lives with her mother, although she does spend some weekends with her father in his home across from the inner city school. Ginny's mother has mental health problems. She alternates between being intensely happy to have to children and feeling that Ginny and her younger brother are a great burden. Ginny's mother does not work, and her father does odd jobs in the community. Ginny's father has been married twice before. Both of her parents are in their early forties.

The telephone number I am given is Ginny's father's. He is the most questioning of all the parents about the purposes of the study. However, he quickly indicates that he does not wish to opt out when given the opportunity to do so. He indicates to me that he wishes to be present at the interview because of his wife's mental health problems.

When I arrive at the home for the interview, I am greeted by an intense, rotund man and am led past piles of furniture and junk up the stairs to the second floor. Ginny and her mother are seated at the cluttered table eating lunch. I have rarely seen such grime and disorder in a home. The furniture in the living room is piled with utensils appliances, pictures and other sundry objects. The stove and refrigerator were closer to the centre of the kitchen than to any of the walls. People and the large dog have to pick a careful path in the little clear floor space. Although Ginny does not spend a great deal of time with her father, toys and books were conspicuous by their absence. Ginny's father apologizes for the condition of the home, stating that he is renovating the first floor to make an apartment for his mother.

Ginny's father asks many more questions and requests a copy of the parent consent form before I can begin the interview. Ginny's mother responds nervously to the questions, occasionally seeking confirmation about her judgements from Ginny. Ginny sits quietly eating during the initial part of the interview. However, she is bored toward the latter half and sulks when she doesn't get adult attention to her demands to "go home."

In the classroom situation, Ginny is quiet and unobtrusive. She follows the teacher's instructions but does not really interact with the other children in the classroom. She responds in an unemotional way to the demands of the conceptual tasks I present to her. Her scores are average. Her teacher also perceives her skills to be at least average. However, her mother perceives that her development is low in all areas except self-help. She also feels her daughter is overly active, although this behaviour is certainly not obvious in the classroom. Ginny's self-concept score is one of the lowest in my study. The only area where she has any positive feelings about herself is physical competence, i.e., running fast and jumping high.

Ginny is a little girl who lives in at least one environment that is confused and disordered. Her interactions with significant adults tend to swing to extremes. Although she is a capable child in terms of conceptual development, her self-concept is exceptionally negative. Ginny already gives the impression of being a "lost" little soul. The utter chaos in her life may very possibly result in feelings of helplessness and eventual early school learning for any one of a number of reasons.

h. Hope

Hope is the personification of a whiny, exceptionally active child. Her sharp little features are often squeezed into a scowl. She constantly seeks attention from any and all adults with whom she comes in contact. Hope lives with her mother and older sister in a small frame house near the inner part of the city. The sulferous fumes from the nearby paper mill permeate the air.

Hope's mother has forgotten about our interview, although I had just called her the previous evening. Hope's mother works in a factory, although she plans to resume truck driving once her daughters are older. The family is in a state of flux at the moment, adjusting to the absence of an abusive, alcoholic father. Hope's mother had ordered him to move out three days ago. This is the second separation, and according to Hope's mother, a final one. There is a big hole in the wall by the staircase leading to the second story. Hope informs me that her father had gotten angry and had thrown something.

Hope's mother recently had Hope put on Ritalin. She feels that the drug has significantly improved Hope's behavior. She is also trying very hard to be more assertive and consistent in her interactions with Hope.

Hope has a good variety of toys, many of which are designed to stimulate academic behavior. Her mother is encouraging her to play with just one toy at a time and to try to stay in one room of the house rather than leaving toys all over. The small rooms are immaculate. A nutritious supper has been started on the counter. The television is on in the living room. Hope's mother says it is on most of the time.

Hope's mother responds easily to the questions asked in the interview, although she allows herself to be interrupted frequently by Hope's darting, attention-seeking behavior. She sharply reprimands Hope a number of times and at one point roughly pushes her into a chair. She feels that Hope is a behavior problem, largely as a result of her immature, demanding and impulsive, overly active behavior. However, she does feel that her daughter's skills are fairly well developed.

In the classroom situation, Hope can be a dynamo. Her teacher and the aide notice great fluctuations in her activity level. Some days, when they assume she has had her medication, she is quite manageable, although she is still demanding. On other days she is all movement, and they assume she has not had Ritalin. Not surprisingly, Hope finds it very difficult to attend and participate appropriately in group situations. It is also not easy for her to follow the rules and routines of the classroom. Her teacher feels that her skills are average in most areas, although her socialization skills are a little low.

Hope was most anxious to accompany me to the coat room at the back of the class. In the one-to-one situation, she attended well to all tasks presented. Her scores on the conceptual tasks were average. Hope's self-concept is poor, particularly regarding her competence and behavior. She feels that she is "bad." Her socioemotional development is immature from the perception of Hope, her mother and her teacher.

Hope is a little girl who seems to have developed a coping style which is causing her distress. She does not feel good about her behavior and it is constantly getting her into trouble. She has been the victim of considerable violence and a great deal of inconsistency in her interactions with the significant adults in her life. Although her teacher feels that the medication is moderating Hope's behavior, my impression from my interactions with her is that her exceptionally active behavior is learned. I suspect that fluctuations in classroom behavior may be a result of what has gone on in the home in the morning prior to Hope coming to school. The unfortunate aspect of the situation is that Hope's behavior is resulting in her not being liked by either her peers or her teacher. She is becoming an increasingly unhappy little girl.

i. General Impressions

As I visited the parents of the children in my study, I was struck by the differences in parents' awareness of the impact they have on their children's development. As previous research has indicated, there was a definite relationship between the education and/or awareness that parents had about child development and the academically-oriented stimulation/interaction they provided for their children. For example, a number of mothers were horrified at the questions regarding their children's skills with scissors or with a knife at mealtime. Knives and scissors are dangerous object. Yet these same mothers blithely allowed their children to swing sharp objects at their siblings and to dangle dangerously from furniture or stairs. It apparently had not occurred to these mothers that they could teach cutting skills and monitor cutting activities.

Many mothers felt that their preschool children should be allowed to constantly demand attention, that this is "what children did." When these mothers felt their children would learn restraint and the ability to follow rules, directions and the routines of others, I do not know. Many mothers felt that their children did not have to show respect for the mothers' own needs and feelings as long as the child's needs were met. These children tended to have greater difficulty adjusting to the "give and take" of the classroom situation.

Despite efforts to remain neutral, I am only human. I had thought that the children from the classroom in the solidly middle class area would be the easiest to assess. In fact, they were among the most difficult. These children may have been more used to having adults interact on a one-to-one basis in the completion of educational tasks. In any case, they often tended to resent being removed from the actvities going on in the classroom and to be easily distracted by classroom noises. In contrast, many of the children in the inner city school classrooms literally read my lips, with their eyes never wavering from my face despite the activity in the hallway behind them or in the coat room around them. Most of these children would have returned for any number of additional individual sessions, regardless of what was taking place in the classroom. Part of the reason for this difference in the children's eagerness for the individual sessions may have been different levels of exposure to educationally oriented tasks. It was my impression that many of the children from homes with higher levels of stimulation/interaction of an academic nature were more cognizant of the challenge of the tasks presented. They seemed to be eager to return to the less "threatening" play of the classroom. Children from homes with lower levels of stimulation/interaction were much more aware of the actual interaction and tended to treat the tasks as a "game" of not much importance. This is an avenue which I would like to pursue in the future.

Finally, this study concretized for me the importance of early interactions on the personality and conceptual style of these little children. I can only hope that permission for an early intervention project will be given so that I can help to repay them in some measure for all they have given me.

B. Limitations of the Current Study:

1. Sample bias and measurement error. Some bias was introduced into the sample in the current study. As is frequently the case in educational research (Rankin, 1981), subjects were not randomly selected from a large population. Consequently, study results will be of

limited generalizability to other Canadian preschool populations, including, possibly, rural populations within the same school board jurisdiction.

Behavior rating scales, by their very nature, make the rater an evaluating instrument. Thus, they are subject to errors of recall and relative tolerance for and expectations of behavior (Cadwell & Jenkins, 1986). Many of the instruments used in the current study were behavior rating scales. However, it should be pointed out that there were generally positive correlations between instruments measuring identical skills as perceived by parents and by teachers. Some of the mothers in the current study had limited schooling and education. Thus, it was sometimes necessary to explain some of the questions in the structured interview in much simpler detail. This may also have influenced results, although care was taken not to bias explanations in any way.

There are many difficulties of reliability and validity inherent in preschool assessment procedures, including developmental change, fluctuations in behavior, emerging skills and variables relating to the situation (Paget & Nagle, 1986). The ideal would be to observe actual parent-child and teacher-child interactions in their typical environments. However, both time and cost constraints for this type of endeavor are prohibitively high. Therefore, it is possible that some bias was introduced as a result of one-time measurement of interactions and conceptual skills.

2. The effects of daycare and/or nursery school. A potentially important variable which was not measured in the current study was the possible effects of out-of-home care on the children involved. From a systems theory standpoint, the interactions within a daycare situation may be important contributers to the child's development (Minuchin, 1987), although little is actually known about the effects of daycare (Lamb, Hwang, Broberg & Bookstein, 1988; Pence & Goelman, 1987).

Adult supervision of the activities of the preschool child range from highly structured activities, where self-directed play is unfamiliar, to unsupervised pursuit of self-interests (Hill, 1987). In a long-term follow-up of preschool children, Harper and Huie (1987) indicated that there was a positive relationship between early, adult-oriented activities and later academic achievement. However, children from homes where there was possible "passive caregiver neglect" tended to seek peer attention and affection and to have more of a social orientation to school. Concomitantly, Ladd and Price (1987), in a longitudinal study of children's social adjustment from nursery through late kindergarten, found that children who maintained stability with peers during the transition were more positive about school.

The types of facilities available for out-of-home care in the city where this study was conducted range from licensed daycare centres to unlicensed family daycare. Preschool education had its roots in a movement by middle SES mothers to enhance their children's development. In contrast, daycare had its beginning in a welfare movement to provide care for the children of working class and immigrant mothers (Scarr & Weinberg, 1986). Thus, it is not surprising that there should be some differences in the experiences of the children attending the two types of programs. There has been some concern expressed regarding "lower quality" unlicensed family daycare which does not compensate for poor home conditions (Pence & Goelman, 1987; Petrie, 1984). Unfortunately, children from less interactive and stimulating home environments tend more often to be placed in lower quality daycare (Lamb et al., 1988). These children may also lack stability in caregivers as a result of more frequent change of daycare. The stability of the child's caregiver(s) and the peers in child care are also considered to be an important factor in the development of social competency (Howes, 1987).

As was indicated in the section describing the sample, there were a number of children whose parent(s) worked outside the home, necessitating out-of-home care for the child. The type of care ranged from having another female come to the home, to having the child go to another home where one or more additional children were being cared for, to formal daycare centres and nursery schools. The length of time during which children had experienced daycare also seemed to vary from four years to very infrequently. Informal observation would lead to the conclusion that in those cases where it was known that the children had experienced out-of-home daycare, those children who had attended formal daycare were more socially adept with both teachers and peers and tended to have more highly devloped conceptual skills than did their peers who had experienced informal daycare. However, the children who experienced formal care also tended to have home environments which were more education-oriented and which were in the higher SES neighbourhoods. It is possible that some of the difference between the "High" group and the "Low" group may have been due to difference in the type and the amount of daycare experienced, rather than to just home interactions.

3. The effects of teacher-learner interactions. Another potentially important factor was not measured in the current study. It has been suggested that teacher-learner interactions may be an important factor in academic failure (Weinstein, 1983). Teacher behaviors and attitudes such as sarcasm and yelling could be construed as emotional abuse. As such, these behaviors could contribute to lower cognitive performance in the same way as does similar abuse in the home (Nesbit & Kariaganis, 1987). Teacher stress can lead to feelings of resentment of those children needing help, feelings of cynicism, and a tendency to regard children as problems (Champion & Westbrook, 1984). Thus, it is possible that teachers who are particularly stressed are no better at effective interaction with low SES preschoolers than are the parents of these children. Without doubt, the large numbers of children in small classroom and the integration of special needs children contributed some stress to the teachers in this study. How this, in turn, affected the children was not measured.

Teachers' views regarding the nature of children's learning and the importance of early experiences in the development of cognition may influence expectations (Alberman, 1973; DeVries, 1987; Spreen, 1979; Werner & Smith, 1977). There is also a body of research indicating that teachers tend to perceive student performance on the basis of such non-academic factors as social adjustment (Good & Brophy, 1987; Good & Weinstein, 1986; Kohn & Rosman, 1974; Schaefer, 1971; Solomon & Kendall, 1977; Wright, 1983), socioeconomic level of parents (Good, 1987; Quay & Jarrett, 1986), and along task-related dimensions such as perseverance, achievement orientation and attentiveness (Caldwell & Jenkins, 1986; Schaefer, 1971). Quay and Jarrett (1986) found that teachers of low SES preschool children interacted significantly less with their students than did teachers of middle SES preschool children. Students who are felt to be more capable are frequently given more opportunity to analyze tasks, more responsibility for learnig and self-evaluatin, and more honest and contingent feedback (Good & Weinstein, 1986). Thus, it may be those very children who haven't had many positive experiences and interactions who get the least opportunity for these in school. Similarly, children who need to assume responsibility for their own learning and to become active processors of information (Mulcahy et al., 1987; Torgeson & Licht, 1983) may be given the least opportunity to do so.

Research has indicated that students are very sensitive to differences in teacher behavior toward different groups of individuals (Weinstein, 1983). Thus, differences in teacher behavior could negatively affect the self-concept of lower achievers (Brophy & Good, 1970; Good & Brophy, 1987), particularly those from low SES backgrounds.

Teacher differences in their approach to students from different backgrounds was not measured in the current study. However, it was observed that teachers were very aware of the socioeconomic and/or ethnic status of their children. The experimenter generally heard negative comments only about lower SES children. It was also noticed that it was those children who were best dressed, who were most acceptably behaved and/or who were the most communicative and least demanding who were chosen most often for tasks of responsibility. These children also seemed to be given more direct eye contact and opportunities for interactive conversation. Thus, there may very well have been some teacher-learner interactions which negatively effected the performance of some children on conceptual and/or socioemotional tasks. However, since there tended to be a range of children from homes with high and low levels of stimulation/interaction within each of the classrooms, it is not felt that there was any bias according to classroom placement.

4. Temperment of the child. One factor which was often alluded to but which was not measured or dealt with directly in the current study was the effect of the child's disposition or temperment on the interactions encountered by the child. It is known that social, emotional and/or physical problems in the child's development may interact with parent behaviors to produce additional problems (Wilon 1986). In other words, the child's behavior is affected by the environment, but the child, in turn also influences the environment. For example, it was noted that there was a relationship between mothers' perception of lack of coordination and the degree of positive physical and eye contact directed by the mothers at the children. Similarly, there was a relationship between perceived (by Mother) immature and hyperactive behavior and the degree of stimulation/interaction in the home. Thus, it is possible that more "difficult" children had gradually come to receive less attention in the form of stimulation/interaction as a result of dissatisfying relationships with the mother.

C. Future Directions

There is a need for new longitudinal studies, as well as for research on family-focused interventions because of the promise they seem to hold for both the child and the parent (Barnett & Escobar, 1987). There is also a need for research which will focus on demonstrating effective intervention with specific types of children in specific geographic areas. At present, there is a tendency to rely on "what works", which is generally reflective of the values of the practitioner and his/her view of the child learning and development and which is "measured" by achievement on short-term assessments of children's right answers and "good" behavior (DeVries, 1987). Although the majority of published research in the area has originated in the United States, the situation is felt to be no different in Canada, where it is argued that a "bandwagon effect" results in local boards or provincial governments implementing early childhood education programs without adequate (local) research, program monitoring, or personnel training (Biemiller, 1982; Fowler, 1978).

Very little Canadian research has been done on the needs and characteristics of children at risk for academic difficulty and/or social/behavior problems (Ryan, 1972). It has been suggested that frequently we simply copy trends in the United States, or seek the most inexpensive way to solve problems (Biemiller, 1982). While research completed in the United States is obviously useful and has implications for practical implication in Canada, Canadian research is definitely also needed. Canada has been described as a "multicultural mosaic", and as such our children may have different strengths and needs than their American peers. In addition, Canada does not have the SES extremes that are found in the United States. Much of the early research in the area of early identification and intervention was based in lower SES areas. Canadian research into early identification and the development of social skills (e.g., Rubin & Pepler, 1980; Wright, 1980), and on the nature of early intellectual development (e.g., Case, 1978; Rubin & Pepler, 1980) would be nicely complimented by research into early intervention with preschool children at risk for academic failure and socioemotional problems (Biemiller, 1982).

The current study was not designed as a needs assessment of children who are possibly at risk for either academic failure or social/behavioral problems. Rather, it was a study of the relationships between different levels of home stimulation and interaction and cognitive and socioemotional development of a junior kindergarten sample in a city in eastern Ontario. However, one desired implication of the study was that the results would be of some use to local educators planning early intervention at the daycare or junior kindergarten level. This experimenter contends that the focus of such intervention should be on providing consistent cause-effect and problem-solving experiences which reinforce to the child the control they have over their own learning. Experiences such as this will not only increase conceptual skills, they will also enhance the child's sense of self-esteem and self-worth.

However, intervention is broader than just the child. One of the more effective methods of intervention with children at risk has been to help parents to develop more appropriate parenting skills through the development of their own self-concept, self-confidence, self-discipline (Seitz et al., 1985). Results of the curent study would indicate that mothers who provided lower levels of stimulation/interaction for their children tended also to be younger, less well educated and unmarried. They would seem to prime candidates for family support intervention. A goal for the future would be to coordinated efforts from different disciplines such as education, health and community services to provide parent-child intervention programs.

Finally, the results of this study point to the possible usefulness of measures of parent-child interaction and of the amount and degree of stimulation/interaction in the home in the area of early identification. They also indicate the possible importance of including measures of self-concept and socioemotional development in preschool screening assessments. This is an area which has not received a great deal of interest in the past, but is one which may yield important information about children at risk for later difficulties.

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COUNTY BOARD OF EDUCATION
902 2e Rue ouest
Second Street West
Cornwall, Ontario
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Appendix A

January, 1989

Dear ______________________________

This is a letter of introduction. My name is Patricia Kaufman. With the approval of the S.D. & G. Counties Board of Education, I will be exploring possible reasons why some preschool children have more difficulty than others in adjusting to school and learning the subjects taught there. I will be spending a considerable amount of time in a number of city schools during the next few months gathering information which should help school personnel to help all preschool children make the most of their academic careers. Your child may have already mentioned that his/her class has had a visitor in the past few weeks.

My study will look at parents and teachers as partners in the education process, thus I will be asking for your input as well as input from _______________ teacher. I will be contacting you personally within the next few weeks with a request to visit with you in your home in order to get to know your child from your viewpoint. Your cooperation will be very much appreciated.

If you wish, you can obtain feedback regarding your child's learning style once the study has been completed. If you have any questions regarding this study, please contact Mrs.Patricia Kaufman at 932-1768.

Sincerely,

_______________________ (Patricia Kaufman)

_______________________ (School Principal)

CONSEIL D'EDUCATION DES COMTES DE
Stormont, Dundas & Glengarry
COUNTY BOARD OF EDUCATION
902 2e Rue ouest
Second Street West
Cornwall (Ontario)
K6H 5S6
(613) 933-6990

C

Appendix B

January, 1983

Dear ______________________________

With the approval of the S.D. & G. Counties Board of Education, Mrs. Patricia Kaufman will be exploring possible reasons why some preschool children have more difficulty than others in adjusting to school and learning the subjects taught there. She will be spending a considerable amount of time in a number of city schools during the next few months gathering information which should help school personnel to help all preschool children make the most of their academic careers.

Mrs. Kaufman's study will look at parents and teachers as partners in the education process, thus she will be asking for your input as well as input from ________________ teacher. She will be contacting you personally to request to visit you in order to get to know your child from your viewpoint. She will also meet with each preschool child at school and have the child complete different tasks which will give her information about how that child learns and views the world. Each child's teacher will also be asked to complete questionnaires similar to the ones you will complete to give information on how the teacher views the child.

If you wish, you can obtain feedback regarding your child's learning style once the study has been completed. If you have any questions regarding this study, please contact Patricia Kaufman at 932-1768.

Before Mrs. Kaufman can see your child, your permission must be obtained. By indicating your consent below, you will be supporting your school in its effort to meet your child's learning needs.

Sincerely,

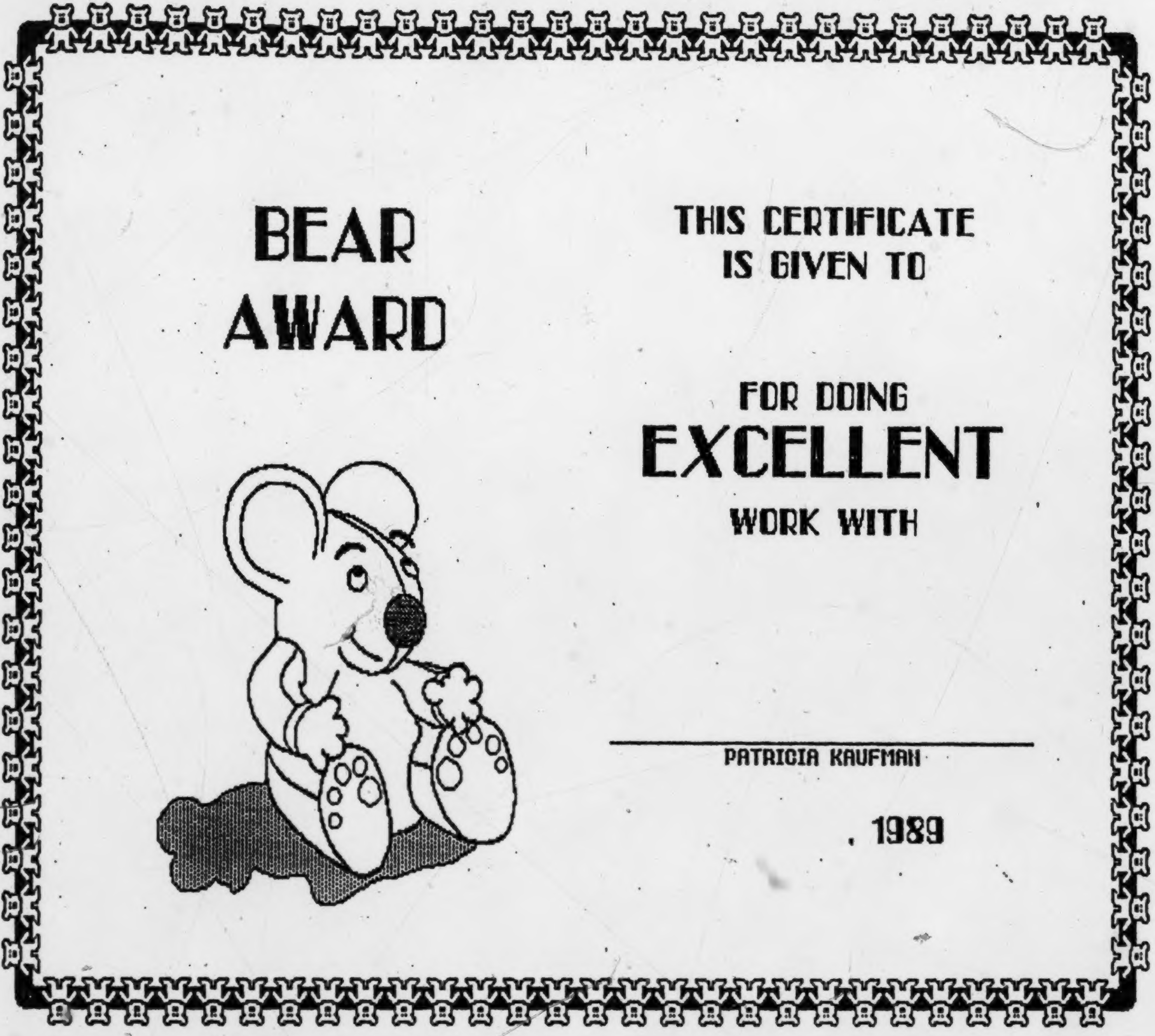
____
(School Principal)

- -

I, ______________________________, give my consent for ______________________
(Print name of Parent or Guardian) (Print name of Child)
to participate in the Preschool Research Study to be conducted by Mrs. Patricia Kaufman.

______________________________ ______________________
(Signature of Parent or Guardian) (Date)

Appendix C



BEAR AWARD

THIS CERTIFICATE
IS GIVEN TO

FOR DOING
EXCELLENT
WORK WITH

PATRICIA KAUFMAN

, 1989

Appendix D

Table 1

Summary Table: Comparison of Ranges, Means, Standard Deviations and Standard Errors of Measurement of High and Low Groups on all Instruments

High Group

INS.	MINIMUM	MAXIMUM	MEAN	S.D.	S.E.M.
HOME					
H1	6	11	9.97	1.48	.25
H2	6	7	6.92	.28	.05
H3	5	7	6.86	.49	.08
H4	3	7	6.19	1.22	.2
H5	3	5	4.61	.55	.09
H6	2	5	4.22	.96	.16
H7	6	9	8.14	.87	.14
H8	3	4	3.83	.38	.06
H9	45	55	50.69	6.57	.6
BLISHEN	20	150.34	76.73	38.34	6.39
MPI					
M1	10	20	13.73	3.78	.62
M2	5	17	11.76	4.29	.71
M3	10	18	16.49	3.19	.52
M4	20	34	25.81	5.75	.95
M5	5	15	10.03	2.75	.45
M6	0	7	3.49	2.09	.34
M7	2	9	5.95	1.62	.27
M8	0	9	3.22	2.11	.35
M9	0	8	2.24	2.15	.35
M10	0	9	2.89	2.74	.45
M11	0	7	2.32	1.51	.25

Table 1 (Cont.)

Summary Table: Comparison of Ranges, Means, Standard Deviations and Standard Errors of Measurement of High and Low Groups on all Instruments

High Group (Cont.)

INS.	MINIMUM	MAXIMUM	MEAN	S.D.	S.E.M.
VABS					
VC1	78	128	94.27	19.13	3.15
VD2	80	124	94.57	19.21	3.16
VS3	72	119	93.92	18.32	3.01
VM4	74	129	99.62	20.53	3.38
VT5	76	127	94.82	18.47	3.04
CIRCUS					
C1	7	29	19	6.18	1.02
C2	12	36	25.62	7.35	1.21
PPVT-R	83	137	101.97	22.27	3.66
TOESD					
TS	2	14	9.5	3.01	.5
TT	2	15	11.47	2.88	.48
TP	5	15	10	3.24	.54
PSI					
PT1	141	185	163	11.06	1.84
P2	29	45	37.81	4.08	.68
P3	20	30	24.83	2.62	.44
P4	24	36	30.7	3.66	.61
P5	15	23	19.58	2.06	.34
P6	20	36	31.22	3.68	.61
P7	16	22	19.39	2.09	.35

Table 1 (Cont.)

Summary Table: Comparison of Ranges, Means, Standard Deviations and Standard Errors of Measurement of High and Low Groups on all Instruments

High Group (Cont.)

INS.	MINIMUM	MAXIMUM	MEAN	S.D.	S.E.M.
KSS					
K1	5	25	8.83	5.61	.94
K2	6	28	10.28	5.57	.93
K3	6	24	8.83	4.78	.8
K4	5	25	9.22	5.16	.86
K5	4	16	5.31	3.12	.52
K6	3	14	4.08	2.34	.39
K7	5	16	6.67	3.21	.54
K8	2	6	2.86	1.53	.26
KT9	36	141	55.17	28.54	4.76
JOSEPH					
J1	8	30	24.31	6.03	1.01

Table 1 (Cont.)

Summary Table: Comparison of Ranges, Means, Standard Deviations and Standard Errors of Measurement of High and Low Groups on all Instruments

Low Group

INS.	MINIMUM	MAXIMUM	MEAN	S.D.	S.E.M.
HOME					
H1	2	10	6.26	1.86	.3
H2	3	7	5.82	1.25	.2
H3	0	7	5.95	1.59	.25
H4	0	7	3.95	1.86	.3
H5	0	5	3.56	1.05	.17
H6	0	5	2.46	1.23	.2
H7	2	8	5.82	1.36	.22
H8	0	4	2.59	1.25	.2
H9	17	44	36.41	7.15	1.15
BLISHEN	20	127.09	46.19	27.94	4.47
MPI					
M1	8	21	13.56	3.78	.61
M2	2	15	9.13	3.48	.56
M3	8	18	14.36	3.59	.58
M4	7	31	21.51	6.37	1.02
M5	2	12	8.31	2.52	.4
M6	0	6	2.18	1.93	.31
M7	4	8	4.46	1.65	.27
M8	0	16	5.67	3.7	.59
M9	0	8	4.54	2.59	.42
M10	0	16	6.05	4.45	.71
M11	0	7	3.05	1.62	.26

Table 1 (Cont.)

Summary Table: Comparison of Ranges, Means, Standard Deviations and Standard Errors of Measurement of High and Low Groups on all Instruments

Low Group (Cont.)

INS.	MINIMUM	MAXIMUM	MEAN	S.D.	S.E.M.
VABS					
VC1	62	103	84.64	16.48	2.64
VD2	76	115	89.9	17.62	2.82
VS3	73	101	82.21	15.47	2.48
VM4	70	112	87.69	18	2.88
VT5	70	102	84.06	16.05	2.57
CIRCUS					
C1	6	24	13.67	4.92	.79
C2	5	35	19.56	7.26	1.16
PPVT-R	55	129	86.49	23	3.68
TOESD					
TS	1	12	6.28	3.48	.55
TT	1	14	9.78	3.48	.55
TP	1	13	7.2	3.63	.57
PSI					
PT1	107	191	144.93	29.63	4.68
P2	15	50	33.86	8.61	1.36
P3	10	30	22.03	5.05	.8
P4	16	39	27.68	6.72	1.06
P5	13	25	17.38	3.92	.62
P6	16	39	25.9	7.04	1.13
P7	12	24	18.08	3.83	.61

Table 1 (Cont.)

Summary Table: Comparison of Ranges, Means, Standard Deviations and Standard Errors of Measurement of High and Low Groups on all Instruments

Low Group (Cont.)

INS.	MINIMUM	MAXIMUM	MEAN	S.D.	S.E.M.
KSS					
K1	5	21	12.38	5.49	.87
K2	6	27	14.3	7.09	1.12
K3	6	24	12.5	5.91	.94
K4	5	21	11.23	5.52	.87
K5	4	14	5.95	2.71	.43
K6	3	14	6.38	3.68	.58
K7	5	18	7.75	4.19	.66
K8	2	10	3.83	2.34	.37
KT9	37	127	74.55	31.09	4.91
JOSEPH					
J1	6	30	19.28	6.57	1.04

INS.=Instrument; S.D.=Standard Deviation; S.E.M.= Standard Error of Measurement; H1=(HOME) Stimulation through toys, games and reading materials; H2= Language and stimulation; H3=Physical environment: safe, clean and conducive to development; H4=Pride, affection and warmth; H5=Stimulation of academic behavior; H6=Modeling and encouragement of social maturity; H7=Variety of stimulation; H8=Physical

Table 1 (Cont.)

Summary Table: Comparison of Ranges, Means, Standard Deviations and Standard Errors of Measurement of High and Low Groups on all Instruments

punishment; H9=Home Total; M1=(MPI) Self-Help; M2=Fine Motor; M3=Expressive Language; M4=Comprehension; M5=Memory; M6=Letter Recognition; M7=Number Comprehension; M8=Immaturity; M9=Hyperactivity; M10=Behavior Problems; M11=Emotional Problems; VC1=(VABS) Communication; VD2=Daily Living Skills; VS3=Socialization; VM4=Motor Skills; VT5=Composite; C1=(CIRCUS) Think it Through; C2=How Much and How Many; PPT=PPVT-R; TS=(TOESD)Student; TT=Teacher; TP=Parent; PT1=(PSI)Child Domain Total; P2=Adaptability; P3=Acceptability; P4=Demandingness; P5=Mood; P6=Distractibility/Hyperactivity; P7=Reinforces Parent; K1=(KSS) Independent Task Work; K2=Group Attending/Participation; K3=Following Class Routine; K4=Appropriate Classroom Behavior; K5=Self-Care; K6=Direction Following; K7=Social/Play Skills; K8=Functional Communication; KT9=Total; J1=Joseph

Table 2

Summary Table: One-Way Analyses of Variance for the HOME

Source:	SS	df	MS	F	P
-Stimulation through material (H1)-					
HL	258.47	1	258.47	90.54	<.000
Error	208.41	73	2.86		

Source:	SS	df	MS	F	P
-Language stimulation (H2)-					
HL	22.49	1	22.49	26.28	<.000
Error	62.49	73	.86		

Source:	SS	df	MS	F	P
-Physical environment (H3)-					
HL	15.58	1	15.58	10.91	<.001
Error	104.20	73	1.43		

Table 2 (Cont.)

Summary Table: One-Way Analyses of Variance for the HOME.

Source:	SS	df	MS	F	P
-Pride, affection, and warmth (H4)-					
HL	94.41	1	94.41	37.55	.<000
Error	183.54	73	2.51		

Source:	SS	df	MS	F	P
-Stimulation of academic behavior (H5)-					
HL	20.52	1	20.52	28.73	<.000
Error	52.15	73	.71		

Source:	SS	df	MS	F	P
-Modeling Social Maturity (H6)-					
HL	58.03	1	58.03	47.12	<.000
Error	89.92	73	1.23		

Table 2 (Cont.)

Summary Table: One-Way Analyses of Variance for the HOME

Source:	SS	df	MS	F	P
-Variety of stimulation (H7)-					
HL	100.62	1	100.62	76.47	<.000
Error	96.05	73	1.32		

Source:	SS	df	MS	F	P
-Physical punishment (H8)-					
HL	28.95	1	28.95	32.80	<.000
Error	64.44	73	.88		

Source:	SS	df	MS	F	P
-Total (H9)-					
HL	3819.59	1	3819.59	116.81	<.000
Error	2387.08	73	32.70		

Table 3

Summary Tables: Two-Way Analyses of Variance for HOME

Source:	SS	df	MS	F	P
-Stimulation through materials (H1)-					
HL	248.49	1	248.49	85.92	<.000
SX	2.86	1	2.86	.99	-
HL*SX	.26	1	.26	.09	-
Error	205.35	71	2.89		

Source:	SS	df	MS	F	P
-Language stimulation (H2)-					
HL	21.17	1	21.17	24.74	<.000
SX	.68	1	.68	.80	-
HL*SX	.98	1	.98	1.14	-
Error	60.77	71	.86		

Table 3 (Cont.)

Summary Tables: Two-Way Analyses of Variance for HOME

Source:	SS	df	MS	F	P
-Physical environment (H3)-					
HL	15.41	1	15.41	10.59	<.002
SX	.01	1	.01	.01	-
HL*SX	.91	1	.91	.63	-
Error	103.28	71	1.46		

Source:	SS	df	MS	F	P
-Pride, affection, and warmth (H4)-					
HL	87.62	1	87.62	35.88	<.000
SX	5.01	1	5.01	2.05	-
HL*SX	4.77	1	4.77	1.95	-
Error	173.37	71	2.44		

Table 3 (Cont.)

Summary Tables: Two-Way Analyses of Variance for HOME

Source:	SS	df	MS	F	P
-Stimulation of academic behavior (H5)-					
HL	20.16	1	20.16	27.65	<.000
SX	.00	1	.00	.00	-
HL*SX	.37	1	.37	.51	-
Error	51.77	71	.73		

Source:	SS	df	MS	F	P
-Modeling social maturity (H6)-					
HL	55.19	1	55.19	44.49	<.000
SX	1.13	1	1.13	.91	-
HL*SX	.63	1	.63	.51	-
Error	88.08	71	1.24		

Table 3 (Cont.)

Summary Tables: Two-Way Analyses of Variance for HOME

Source:	SS	df	MS	F	P
-Variety of stimulation (H7)-					
HL	97.96	1	97.96	72.84	<.000
SX	.30	1	.30	.22	-
HL*SX	.28	1	.28	.21	-
Error	95.49	71	1.35		

Source:	SS	df	MS	F	P
-Physical punishment (H8)-					
HL	25.22	1	25.22	32.30	<.000
SX	6.62	1	6.62	8.49	<.005
HL*SX	2.09	1	2.09	2.68	-
Error	55.42	71	.78		

Table 3 (Cont.)

Summary Tables: Two-Way Analyses of Variance for HOME

Source:	SS	df	MS	F	P
-Total (H9)-					
HL	3632.89	1	3632.89	113.61	<.000
SX	74.51	1	74.51	2.33	-
HL*SX	37.97	1	37.97	1.19	-
Error	2270.40	71	31.98		

Table 4

Summary Table: One-Way Analyses of Variance for the MPI

Source:	SS	df	MS	F	P
-Self-help (M1)-					
HL	.14	1	.14	.01	-
Error	692.53	73	9.49		

Source:	SS	df	MS	F	P
-Fine motor (M2)-					
HL	121.24	1	121.24	9.43	<.003
Error	938.44	73	12.86		

Source:	SS	df	MS	F	P
-Expressive language (M3)-					
HL	86.50	1	86.50	17.06	<.000
Error	370.25	73	5.07		

Table 4 (Cont.)

Summary Table: One-Way Analyses of Variance for the MPI

Source:	SS	df	MS	F	P
-Comprehension (M4)-					
HL	353.95	1	353.96	16.28	<.000
Error	1586.72	73	21.74		

Source:	SS	df	MS	F	P
-Memory (M5)-					
HL	53.48	1	53.48	11.13	<.000
Error	350.87	73	4.81		

Table 4 (Cont.)

Summary Table: One-Way Analyses of Variance for the MPI

Source:	SS	df	MS	F	P
-(Letter recognition (M6)-					
HL	29.25	1	29.25	7.23	<.009
Error	295.42	73	4.05		

Source:	SS	df	MS	F	P
-Number comprehension (M7)-					
HL	41.88	1	41.88	21.41	<.000
Error	142.79	73	1.96		

Table 5

Summary Table: One-Way Analyses of Variance for VABS

Source:	SS	df	MS	F	P
-Communication (VC1)-					
HL	1592.12	1	1592.12	14.60	<.000
Error	7960.22	73	109.04		

Source:	SS	df	MS	F	P
-Daily living skills (VD2)-					
HL	290.31	1	290.31	2.34	-
Error	9051.08	73	123.99		

Table 6

Summary Table: One-Way Analyses of Variance for the CIRCUS AND PPVT-R

Source:	SS	df	MS	F	P
-Think it through (C1)-					
HL	577.33	1	577.33	24.31	<.000
Error	1733.95	73	23.75		

Source:	SS	df	MS	F	P
-How much and how many (C2)-					
HL	708.92	1	708.92	17.86	<.000
Error	2897.74	73	39.70		

Source:	SS	df	MS	F	P
-Peabody Picture Vocabulary Test-Revised (PPT)-					
HL	4783.36	1	4783.36	17.82	<.000
Error	19595.38	73	268.43		

Table 7

Summary Table: One-Way Analyses of Variance for TOESD

Source:	SS	df	MS	F	P
-Student (TS)-					
HL	147.57	1	147.57	13.86	<.000
Error	777.31	73	10.65		

Source:	SS	df	MS	F	P
-Teacher (TT)-					
HL	40.57	1	40.57	4.50	<.037
Error	658.97	73	9.03		

Source:	SS	df	MS	F	P
-Parent (TP)-					
HL	115.80	1	115.80	10.07	<.002
Error	839.74	73	11.50		

Table 8

Summary Table: One-Way Analyses of Variance for the PSI

Source:	SS	df	MS	F	P
-Child domain total (PT1)					
HL	3522.77	1	3522.77	14.41	<.000
Error	17841.90	73	244.41		

Source:	SS	df	MS	F	P
-Adaptability (P2)-					
HL	139.38	1	139.38	4.40	<.039
Error	2312.41	73	31.68		

Source:	SS	df	MS	F	P
-Acceptability (P3)-					
HL	83.77	1	83.77	7.77	<.007
Error	786.90	73	10.78		

Table 8 (Cont.)

Summary Table: One-Way Analyses of Variance for the PSI

Source:	SS	df	MS	F	P
-Demandingness (P4)-					
HL	52.80	1	52.80	2.65	-
Error	1454.74	73	19.93		

Source:	SS	df	MS	F	P
-Mood (P5)-					
HL	51.60	1	51.60	8.13	<.006
Error	463.52	73	6.35		

Source:	SS	df	MS	F	P
-Distractibility/hyperactivity (P6)-					
HL	415.18	1	415.18	17.93	<.000
Error	1689.97	73	23.15		

Table 8 (Cont.)

Summary Table: One-Way Analyses of Variance for the PSI

Source:	SS	df	MS	F	P
-Reinforces parent (P7)-					
HL	12.74	1	12.74	2.38	-
Error	390.15	73	5.34		

Table 9

Summary Table: One-Way Analyses of Variance for the MPI

Source:	SS	df	MS	F	P
-Immaturity (M8)-					
HL	108.94	1	108.94	12.21	<.001
Error	651.54	73	8.93		

Source:	SS	df	MS	F	P
-Hyperacity (M9)-					
HL	102.11	1	102.11	18.49	<.000
Error	396.61	73	5.43		

Source:	SS	df	MS	F	P
-Behavior problems (M10)-					
HL	180.45	1	180.45	13.12	<.001
Error	1003.74	73	13.75		

Table 9 (Cont.)

Summary Table: One-Way Analyses of Variance for the MPI

Source:	SS	df	MS	F	P
-Emotional problems (M11)-					
HL	10.23	1	10.23	4.48	<.038
Error	166.92	73	2.29		

Table 10

Summary Table: One-Way Analyses of Variance for the KSS

Source:	SS	df	MS	F	P
-Independent task work (K1)-					
HL	297.60	1	297.60	10.45	<.002
Error	2078.74	73	28.48		

Source:	SS	df	MS	F	P
-Group attending/participation (K2)-					
HL	399.51	1	399.51	10.57	<.002
Error	2758.81	73	37.79		

Source:	SS	df	MS	F	P
-Following class routine (K3)-					
HL	309.20	1	309.20	11.44	<.001
Error	1972.59	73	27.02		

Table 10 (Cont.)

Summary Table: One-Way Analyses of Variance for the KSS

Source:	SS	df	MS	F	P
-Appropriate classroom behavior (K4)-					
HL	93.87	1	93.87	3.41	-
Error	2011.92	73	27.56		

Source:	SS	df	MS	F	P
-Self-care (K5)-					
HL	11.89	1	11.89	1.47	-
Error	591.23	73	8.01		

Source:	SS	df	MS	F	P
-Direction following (K6)-					
HL	122.46	1	122.46	13.27	<.001
Error	673.72	73	9.23		

Table 10 (Cont.)

Summary Table: One-Way Analyses of Variance for the KSS

Source:	SS	df	MS	F	P
-Social/play skills (K7)-					
HL	23.29	1	23.29	1.82	-
Error	936.90	73	12.83		

Source:	SS	df	MS	F	P
-Functional communication (K8)-					
HL	17.93	1	17.93	4.80	<.032
Error	272.66	73	3.74		

Source:	SS	df	MS	F	P
-Total (KT9)-					
HL	7584.31	1	7584.31	9.61	<.003
Error	57589.69	73	788.90		

Table 11

Summary Table: One-Way Analysis of Variance for the Joseph Scale

Source:	SS	df	MS	F	P
-Joseph (J1)-					
HL	539.76	1	539.76	19.79	<.000
Error	1991.23	73	27.28		

Table 12

Summary Table: Pearson Product-Moment Correlations of

HOME, Blishen and Sex

	HL	H1	H2	H3	H4	H5	H6	H7	H8	H9	BL	SX
HL	1											
H1	.744	1										
H2	.514	.657	1									
H3	.361	.435	.485	1								
H4	.583	.586	.62	.385	1							
H5	.531	.623	.563	.322	.414	1						
H6	.626	.632	.633	.497	.574	.554	1					
H7	.715	.76	.539	.41	.565	.585	.525	1				
H8	.557	.529	.462	.176	.345	.256	.508	.42	1			
H9	.784	.897	.806	.601	.772	.681	.804	.811	.598	1		
BL	.421	.543	.338	.217	.384	.405	.45	.516	.265	.52	1	
SX	.12	.166	.155	.036	.208	.069	.164	.123	.337	.206	.02	1

HL=High/Low Grouping; H1=(HOME)Stimulation Through Toys, Games and Reading Materials; H2=Language Stimulation; H3=Physical Environment: Safe, clean and conducive to development; H4=Pride, Affection and Warmth; H5=Stimulation of Academic Behavior; H6=Modeling and Encouragement of Social Maturity; H7=Variety of Stimulation; H8=Physical Punishment; H9=HOME Total Score; BL=Blishen Index Score; SX=Gender

Table 13

Summary Table: One-Way Analysis of Variance of Blishen Index Scores

Source:	SS	df	MS	F	P
-Blishen (BL)-					
HL	17458.90	1	17458.90	15.71	<.000
Error	81111.88	73	1111.12		

Table 14

Summary Table: Analyis of Covariance of all Instruments Used in This Study

Source:	SS	df	MS	F	P
-HOME Stimulation through materials (H1)-					
HL	150.76	1	150.76	60.85	<.001
BL	30.01	1	30.01	12.11	<.001
Error	178.40	72	2.48		

Source:	SS	df	MS	F	P
-HOME Language stimulation (H2)-					
HL	14.31	1	14.31	16.90	<.001
BL	1.52	1	1.52	1.80	-
Error	60.97	72	0.85		

Table 14 (Cont.)

Summary Table: Analyis of Covariance of all Instruments Used in This Study

Source:	SS	df	MS	F	P
-HOME Physical environment (H3)-					
HL	10.55	1	10.55	7.33	<.008
BL	0.63	1	0.63	0.44	-
Error	103.58	72	1.44		

Source:	SS	df	MS	F	P
-HOME Pride, affection, and warmth (H4)-					
HL	69.91	1	69.91	27.60	<.001
BL	1.16	1	1.16	0.46	-
Error	182.38	72	2.53		

Table 14 (Cont.)

Summary Table: Analyis of Covariance of all Instruments Used in This Study

Source:	SS	df	MS	F	P
-HOME Stimulation of academic behavior (H5)-					
HL	11.51	1	11.51	16.83	<.001
BL	2.90	1	2.90	4.24	-
Error	49.25	72	0.68		

Source:	SS	df	MS	F	P
-HOME Modeling social maturity (H6)-					
HL	34.32	1	34.32	29.53	<.001
BL	6.25	1	6.25	5.38	-
Error	83.66	72	1.16		

Table 14 (Cont.)

Summary Table: Analyis of Covariance of all Instruments Used in This Study

Source:	SS	df	MS	F	P
-HOME Variety of stimulation (H7)-					
HL	59.29	1	59.29	50.22	<.001
BL	11.05	1	11.05	9.36	<.003
Error	85.00	72	1.18		

Source:	SS	df	MS	F	P
-HOME Physical punishment (H8)-					
HL	22.48	1	22.48	25.17	<.001
BL	0.11	1	0.11	0.12	-
Error	182.38	72	2.53		

Table 14 (Cont.)

Summary Table: Analyis of Covariance of all Instruments Used in This Study

Source:	SS	df	MS	F	P
-HOME Total (H9)-					
HL	2412.82	1	2412.82	82.14	<.001
BL	272.13	1	272.13	9.26	<.003
Error	178.40	72	2.48		

Source:	SS	df	MS	F	P
-MPI Self-help (M1)-					
HL	0.79	1	0.79	0.07	-
BL	0.02	1	0.02	0.00	-
Error	868.49	72	12.23		

Table 14 (Cont.)

Summary Table: Analyis of Covariance of all Instruments Used in This Study

Source:	SS	df	MS	F	P
-MPI Fine motor (M2)-					
HL	136.36	1	136.36	9.63	<.003
BL	0.01	1	0.01	0.00	-
Error	1005.87	72	14.17		

Source:	SS	df	MS	F	P
-MPI Expressive language (M3)-					
HL	95.48	1	95.48	11.22	<.001
BL	2.15	1	2.15	0.25	-
Error	604.43	72	8.51		

Table 14 (Cont.)

Summary Table: Analyis of Covariance of all Instruments Used in This Study

Source:	SS	df	MS	F	P
-MPI Comprehension (M4)-					
HL	370.68	1	370.68	12.39	<.001
BL	1.57	1	1.57	0.05	-
Error	2124.78	72	29.93		

Source:	SS	df	MS	F	P
-MPI Memory (M5)-					
HL	51.92	1	51.92	8.72	<.004
BL	1.71	1	1.71	0.29	-
Error	422.86	72	5.96		

Table 14 (Cont.)

Summary Table: Analyis of Covariance of all Instruments Used in This Study

Source:	SS	df	MS	F	P
-MPI Letter recognition (M6)-					
HL	25.56	1	25.56	6.63	<.012
BL	11.43	1	11.43	2.97	-
Error	273.58	72	3.85		

Source:	SS	df	MS	F	P
-MPI Number comprehension (M7)-					
HL	41.65	1	41.65	18.06	<.001
BL	2.94	1	2.94	1.28	-
Error	163.78	72	2.31		

Table 14 (Cont.)

Summary Table: Analyis of Covariance of all Instruments Used in This Study

Source:	SS	df	MS	F	P
-MPI Immaturity (M8)-					
HL	114.37	1	114.37	12.61	<.001
BL	5.93	1	5.93	0.65	-
Error	644.14	72	9.07		

Source:	SS	df	MS	F	P
-MPI Hyperactivity (M9)-					
HL	99.67	1	99.67	17.95	<.001
BL	6.85	1	6.85	1.23	-
Error	394.29	72	5.55		

Table 14 (Cont.)

Summary Table: Analyis of Covariance of all Instruments Used in This Study

Source:	SS	df	MS	F	P
-MPI Behavior problems (M10)-					
HL	173.39	1	173.39	12.51	<.001
BL	10.13	1	10.13	0.73	-
Error	984.44	72	13.87		

Source:	SS	df	MS	F	P
-MPI Emotional problems (M11)-					
HL	10.17	1	10.17	4.14	<.046
BL	0.03	1	0.03	0.01	-
Error	174.38	72	2.46		

Table 14 (Cont.)

Summary Table: Analyis of Covariance of all Instruments Used in This Study

Source:	SS	df	MS	F	P
-VABS Communication (VC1)-					
HL	1553.30	1	1553.30	7.29	<.009
BL	3.02	1	3.02	0.01	-
Error	15341.93	72	213.08		

Source:	SS	df	MS	F	P
-VABS Daily living skills (VD2)-					
HL	709.66	1	709.66	3.17	-
BL	326.77	1	326.77	1.46	-
Error	16116.05	72	223.83		

Table 14 (Cont.)

Summary Table: Analyis of Covariance of all Instruments Used in This Study

Source:	SS	df	MS	F	P
-VABS Socialization (VS3)-					
HL	2750.75	1	2750.75	15.13	<.001
BL	162.70	1	162.70	0.90	-
Error	13086.82	72	181.76		

Source:	SS	df	MS	F	P
-VABS Motor skills (VM4)-					
HL	1767.31	1	1767.31	6.94	<.010
BL	184.04	1	184.04	0.72	-
Error	18330.42	72	254.59		

Table 14 (Cont.)

Summary Table: Analyis of Covariance of all Instruments Used in This Study

Source:	SS	df	MS	F	P
-VABS Composite (VT5)-					
HL	2079.26	1	2079.26	10.72	<.002
BL	31.90	1	31.90	0.17	-
Error	13960.52	72	193.90		

Source:	SS	df	MS	F	P
-CIRCUS Think it through (C1)-					
HL	244.78	1	244.78	9.62	<.003
BL	175.42	1	175.42	6.89	<.011
Error	1832.24	72	25.45		

Table 14 (Cont.)

Summary Table: Analyis of Covariance of all Instruments Used in This Study

Source:	SS	df	MS	F	P
-CIRCUS How much and how many (C2)-					
HL	318.97	1	318.97	7.19	<.009
BL	220.83	1	220.83	4.98	<.029
Error	3193.28	72	44.35		

Source:	SS	df	MS	F	P
-Peabody Picture Vocabulary Test -Revised (PPT)					
HL	2902.23	1	2902.23	7.34	<.008
BL	363.49	1	363.49	0.92	-
Error	28469.24	72	395.41		

Table 14 (Cont.)

Summary Table: Analyis of Covariance of all Instruments Used in This Study

Source:	SS	df	MS	F	P
-TOESD Student (TS)-					
HL	97.74	1	97.74	9.14	<.003
BL	7.25	1	7.25	0.68	-
Error	770.06	72	10.70		

Source:	SS	df	MS	F	P
-TOESD Teacher (TT)-					
HL	15.26	1	15.26	1.72	-
BL	19.78	1	19.78	2.23	-
Error	639.19	72	8.88		

Table 14 (Cont.)

Summary Table: Analyis of Covariance of all Instruments Used in This Study

Source:	SS	df	MS	F	P
-TOESD Parent (TP)-					
HL	81.38	1	81.38	7.00	<.010
BL	3.10	1	3.10	0.27	-
Error	836.65	72	11.62		

Source:	SS	df	MS	F	P
-PSI Child domain total (PT1)-					
HL	3308.11	1	3308.11	13.41	<.001
BL	76.27	1	76.27	0.31	-
Error	17765.62	72	246.75		

Table 14 (Cont.)

Summary Table: Analyis of Covariance of all Instruments Used in This Study

Source:	SS	df	MS	F	P
-PSI Adaptability (P2)-					
HL	168.12	1	168.12	5.30	<.024
BL	28.75	1	28.75	0.91	-
Error	2283.66.	72	31.72		

Source:	SS	df	MS	F	P
-PSI Acceptability (P3)-					
HL	89.44	1	89.44	8.26	<.005
BL	7.53	1	7.53	0.70	-
Error	779.37	72	10.86		

Table 14 (Cont.)

Summary Table: Analyis of Covariance of all Instruments Used in This Study

Source:	SS	df	MS	F	P
-PSI Demandingness (P4)-					
HL	54.55	1	54.55	2.71	-
BL	3.56	1	3.56	0.18	-
Error	1451.19	72	20.16		

Source:	SS	df	MS	F	P
-PSI Mood (P5)-					
HL	49.82	1	49.82	7.77	<.007
BL	1.66	1	1.66	0.26	-
Error	461.86	72	6.42		

Table 14 (Cont.)

Summary Table: Analyis of Covariance of all Instruments Used in This Study

Source:	SS	df	MS	F	P
-PSI Distractibility/hyperactivity (P6)-					
HL	307.80	1	307.80	13.15	<.001
BL	4.98	1	4.98	0.21	-
Error	1684.98	72	23.40		

Source:	SS	df	MS	F	P
-PSI Reinforces parent (P7)-					
HL	9.64	1	9.64	1.78	-
BL	0.10	1	0.10	0.02	-
Error	390.05	72	5.42		

Table 14 (Cont.)

Summary Table: Analyis of Covariance of all Instruments Used in This Study

Source:	SS	df	MS	F	P
-KSS Independent task work (K1)-					
HL	148.41	1	148.41	5.31	<.024
BL	67.85	1	67.85	2.43	-
Error	2010.90	72	27.93		

Source:	SS	df	MS	F	P
-KSS Group attending/participation (K2)-					
HL	258.74	1	258.74	6.81	<.011
BL	23.63	1	23.63	0.62	-
Error	2735.18	72	37.99		

Table 14 (Cont.)

Summary Table: Analyis of Covariance of all Instruments Used in This Study

Source:	SS	df	MS	F	P
-KSS Following class routine (K3)-					
HL	173.40	1	173.40	6.47	<.013
BL	43.72	1	43.72	1.63	-
Error	1928.87	72	26.79		

Source:	SS	df	MS	F	P
-KSS Appropriate classroom behavior (K4)-					
HL	52.70	1	52.70	1.90	-
BL	13.20	1	13.20	0.48	-
Error	1998.71	72	27.76		

Table 14 (Cont.)

Summary Table: Analyis of Covariance of all Instruments Used in This Study

Source:	SS	df	MS	F	P
-KSS Self-care (K5)-					
HL	0.73	1	0.73	0.09	-
BL	29.15	1	29.15	3.73	-
Error	562.08	72	7.81		

Source:	SS	df	MS	F	P
-KSS Direction following (K6)-					
HL	65.86	1	65.86	7.26	<.009
BL	20.88	1	20.88	2.30	-
Error	652.85	72	9.07		

Table 14 (Cont.)

Summary Table: Analyis of Covariance of all Instruments Used in This Study

Source:	SS	df	MS	F	P
-KSS Social/play skills (K7)-					
HL	16.69	1	16.69	1.28	-
BL	0.48	1	0.48	0.04	-
Error	936.42	72	13.01		

Source:	SS	df	MS	F	P
-KSS Functional communication (K8)-					
HL	13.85	1	13.85	3.66	-
BL	0.08	1	0.08	0.02	-
Error	272.58	72	3.79		

Table 14 (Cont.)

Summary Table: Analyis of Covariance of all Instruments Used in This Study

Source:	SS	df	MS	F	P
-KSS Total (KT9)-					
HL	4183.18	1	4183.18	5.34	<.024
BL	1158.15	1	1158.15	1.48	-
Error	56431.54	72	783.77		

Source:	SS	df	MS	F	P
-Joseph (J1)-					
HL	269.66	1	269.66	10.39	<.002
BL	122.27	1	122.27	4.71	<.033
Error	1868.96	72	25.96		

Table 15

Summary Table: Two-Way Analyses of Variance for MPI

Source:	SS	df	MS	F	P
-Self-help (M1)-					
HL	1.22	1	1.22	.15	-
SX	97.68	1	97.68	11.66	<.001
HL*SX	.50	1	.50	.06	-
Error	594.78	71	8.38		

Source:	SS	df	MS	F	P
-Fine motor (M2)-					
HL	78.41	1	78.41	7.41	<.008
SX	176.01	1	176.01	16.64	<.000
HL*SX	15.74	1	15.74	1.49	-
Error	751.12	71	10.58		

Table 15 (Cont.)

Summary Table: Two-Way Analyses of Variance for MPI

Source:	SS	df	MS	F	P
-Expressive language (M3)-					
HL	89.74	1	89.74	17.57	<.000
SX	4.42	1	4.42	.87	-
HL*SX	2.87	1	2.87	.56	-
Error	362.61	71	5.11		

Source:	SS	df	MS	F	P
-Comprehension (M4)-					
HL	330.46	1	330.46	14.86	<.000
SX	7.81	1	7.81	.35	-
HL*SX	.35	1	.35	.02	-
Error	1578.70	71	22.24		

Table 15 (Cont.)

Summary Table: Two-Way Analyses of Variance for MPI

Source:	SS	df	MS	F	P
-Memory (M5)-					
HL	50.38	1	50.38	10.24	<.002
SX	.60	1	.60	.12	-
HL*SX	.96	1	.96	.20	-
Error	349.38	71	4.92		

Source:	SS	df	MS	F	P
-Letter recognition (M6)-					
HL	23.22	1	23.22	5.96	<.017
SX	10.18	1	10.18	2.61	-
HL*SX	9.26	1	9.26	2.37	-
Error	276.83	71	3.90		

Table 15 (Cont.)

Summary Table: Two-Way Analyses of Variance for MPI

Source:	SS	df	MS	F	P
-Number comprehension (M7)-					
HL	37.30	1	37.30	19.05	<.000
SX	3.73	1	3.73	1.90	-
HL*SX	.12	1	.12	.06	-
Error	138.99	71	1.96		

Source:	SS	df	MS	F	P
-Immaturity (M8)-					
HL	94.35	1	94.35	10.93	<.001
SX	21.44	1	21.44	2.48	-
HL*SX	15.50	1	15.50	1.80	-
Error	612.85	71	8.63		

Table 15 (Cont.)

Summary Table: Two-Way Analyses of Variance for MPI

Source:	SS	df	MS	F	P
-Hyperactivity (M9)-					
HL	84.44	1	84.44	16.90	<.000
SX	33.45	1	33.45	6.70	<.012
HL*SX	7.00	1	7.00	1.40	-
Error	354.67	71	5.00		

Source:	SS	df	MS	F	P
-Behavior problems (M10)-					
HL	143.49	1	143.49	11.33	<.001
SX	87.01	1	87.01	6.87	-
HL*SX	14.03	1	14.03	1.11	-
Error	899.28	71	12.68		

Table 15 (Cont.)

Summary Table: Two-Way Analyses of Variance for MPI

Source:	SS	df	MS	F	P
-Emotional problems (M11)-					
HL	9.27	1	9.27	4.14	<.046
SX	1.28	1	1.28	.57	-
HL*SX	6.34	1	6.34	2.83	-
Error	159.12	71	2.24		

Table 16

Summary Table: Two-Way Analyses of Variance for VABS

Source:	SS	df	MS	F	P
-Communication (VC1)-					
HL	1447.84	1	1447.84	13.08	<.001
SX	78.49	1	78.49	.71	-
HL*SX	24.93	1	24.93	.23	-
Error	7860.64	71	110.71		

Source:	SS	df	MS	F	P
-Daily living skills (VD2)-					
HL	183.53	1	183.53	1.54	-
SX	537.17	1	537.17	4.51	<.037
HL*SX	37.28	1	37.28	.31	-
Error	8462.43		119.19		

Table 16 (Cont.)

Summary Table: Two-Way Analyses of Variance for VABS

Source:	SS	df	MS	F	P
-Socialization (VS3)-					
HL	2451.81	1	2451.81	29.73	<.000
SX	6.04	1	6.04	.07	-
HL*SX	8.77	1	8.77	.11	-
Error	5854.70	71	82.46		

Source:	SS	df	MS	F	P
-Motor skills (VM4)-					
HL	2227.14	1	2227.14	16.75	<.000
SX	355.59	1	355.59	2.67	-
HL*SX	218.94	1	218.94	1.65	-
Error	9443.40	71	133.01		

Table 16 (Cont.)

Summary Table: Two-Way Analyses of Variance for VABS

Source:	SS	df	MS	F	P
-Composite (VT5)-					
HL	1732.31	1	1732.31	17.93	<.000
SX	207.64	1	207.64	2.15	-
HL*SX	9.17	1	2.17	.10	-
Error	6859.99	71	96.62		

Table 17

Summary Table: Two-Way Analyses of Variance for TOESD

Source:	SS	df	MS	F	P
-Student (TS)-					
HL	148.96	1	148.96	13.78	<.000
SX	1.00	1	1.00	.09	-
HL*SX	8.59	1	8.59	.79	-
Error	767.49	71	10.81		

Source:	SS	df	MS	F	P
-Teacher (TT)-					
HL	34.23	1	34.23	3.87	-
SX	17.84	1	17.84	2.02	-
HL*SX	14.26	1	14.26	1.61	-
Error	628.03	71	8.85		

Table 17 (Cont.)

Summary Table: Two-Way Analyses of Variance for TOESD

Source:	SS	df	MS	F	P
-Parent (TP)-					
HL	90.21	1	90.21	8.69	<.004
SX	94.76	1	94.76	9.13	<.003
HL*SX	6.18	1	6.18	.60	-
Error	736.82	71	10.38		

Table 18

Summary Table: Two-Way Analyses of Variance for KSS

Source:	SS	df	MS	F	P
-Independent task work (K1)-					
HL	228.92	1	228.92	9.03	<.004
SX	275.52	1	275.52	10.87	<.002
HL*SX	1.68	1	1.68	.07	-
Error	1799.51	71	25.35		

Source:	SS	df	MS	F	P
-Group attending/participation (K2)-					
HL	344.81	1	344.81	9.26	<.003
SX	113.23	1	113.23	3.04	-
HL*SX	.05	1	.05	.00	-
Error	2645.19	71	37.26		

Table 18 (Cont.)

Summary Table: Two-Way Analyses of Variance for KSS

Source:	SS	df	MS	F	P
-Following class routine (K3)-					
HL	254.40	1	254.40	9.97	<.002
SX	155.24	1	155.24	6.09	<.016
HL*SX	3.96	1	3.96	.16	-
Error	1811.28	71	25.51		

Source:	SS	df	MS	F	P
-Appropriate classroom behavior (K4)-					
HL	64.07	1	64.07	2.49	-
SX	185.25	1	185.25	7.21	<.009
HL*SX	2.51	1	2.51	.10	-
Error	1825.53	71	25.71		

Table 18 (Cont.)

Summary Table: Two-Way Analyses of Variance for KSS

Source:	SS	df	MS	F	P
-Self-care (K5)-					
HL	8.15	1	8.15	1.03	-
SX	24.56	1	24.56	3.12	-
HL*SX	8.01	1	8.01	1.02	-
Error	559.68	71	7.88		

Source:	SS	df	MS	F	P
-Direction following (K6)-					
HL	115.75	1	115.75	12.39	<.001
SX	4.36	1	4.36	.47	-
HL*SX	6.67	1	6.67	.71	-
Error	663.09	71	9.34		

Table 18 (Cont.)

Summary Table: Two-Way Analyses of Variance for KSS

Source:	SS	df	MS	F	P
-Social/play skills (K7)-					
HL	27.34	1	27.34	2.13	-
SX	11.52	1	11.52	.90	-
HL*SX	13.81	1	13.81	1.08	-
Error	910.58	71	12.83		

Source:	SS	df	MS	F	P
-Functional communication (K8)-					
HL	16.85	1	16.85	4.40	<.04
SX	.70	1	.70	.18	-
HL*SX	.01	1	.01	.00	-
Error	271.96	71	3.83		

Table 18 (Cont.)

Summary Table: Two-Way Analyses of Variance for KSS

Source:	SS	df	MS	F	P
-Total (KT9)-					
HL	6355.53	1	6355.53	8.31	<.005
SX	3239.55	1	3239.55	4.24	<.043
HL*SX	66.60	1	66.60	.09	-
Error	5414.06	71	764.99		

Table 19

Summary Table: One-Way Analyses of Variance for Demographic and Interactional Data

Source:	SS	df	MS	F	P
-Physical contact (I1)-					
HL	4.20	1	4.20	11.46	<.001
Error	26.78	73	.37		

Source:	SS	df	MS	F	P
-Eye contact (I2)-					
HL	2.40	1	2.40	12.21	<.001
Error	14.35	73	.20		

Source:	SS	df	MS	F	P
-Adjectival reference (I3)-					
HL	2.59	1	2.59	6.53	<.013
Error	28.96	73	.40		

Table 19 (Cont.)

Summary Table: One-Way Analyses of Variance for Demographic and Interactional Data

Source:	SS	df	MS	F	P
-Conversation (I4)-					
HL	3.40	1	3.40	8.22	<.005
Error	30.15	73	.41		

Source:	SS	df	MS	F	P
-Reprimand (I5)-					
HL	3.02	1	3.02	12.44	<.001
Error	17.70	73	.24		

Source:	SS	df	MS	F	P
-Praise (I6)-					
HL	.89	1	.89	4.02	<.049
Error	16.23	73	.22		

Table 19 (Cont.)

Summary Table: One-Way Analyses of Variance for Demographic and Interactional Data

Source:	SS	df	MS	F	P
-Behavior (BE)-					
HL	6.38	1	6.38	9.63	<.003
Error	48.37	73	.66		

Source:	SS	df	MS	F	P
-Mothers' education (ME)-					
HL	20.78	1	20.78	3.83	-
Error	396.10	73	5.43		

Source:	SS	df	MS	F	P
-Mothers' marital status (MM)-					
HL	2.32	1	2.32	13.23	<.001
Error	12.82	73	.18		

Table 19 (Cont.)

Summary Table: One-Way Analyses of Variance for Demographic and Interactional Data

Source:	SS	df	MS	F	P
-Mothers' age within decades (MA)-					
HL	93.06	1	93.06	4.42	<.039
Error	1535.60	73	21.04		

Table 20

Summary Table: Pearson Product-Moment Correlations of Interactional, Demographic, Motor and Language Problems

	HL	MA	MM	ME	I1	I2
HL	1					
MA	.427	1				
MM	-.267	-.038	1			
ME	.406	.645	-.021	1		
I1	-.269	-.139	.282	-.115	1	
I2	-.264	-.109	.317	-.09	.548	1
I3	-.195	-.279	.367	-.138	.492	.574
I4	-.227	-.142	.4	-.058	.477	.599
I5	.469	.322	-.065	.383	-.098	-.12
I6	-.079	.172	.171	.187	.142	.215
BE	-.241	-.057	.172	-.01	.425	.248
MTR	-.146	-.175	.23	-.27	.456	.522
LNG	-.106	-.149	.044	-.221	.289	.289
BL	.474	.504	-.362	.548	-.186	-.241

Table 20 (Cont.)

Summary Table: Pearson Product-Moment Correlations of Interactional, Demographic, Motor and Language Problems

	I3	I4	I5	I6	BE	MTR	LNG	BL
I3	1							
I4	.601	1						
I5	-.139	-.135	1					
I6	.265	.174	-.208	1				
BE	.381	.346	-.082	.24	1			
MTR	.314	.329	-.14	.084	.004	1		
LNG	.207	.112	-.113	.174	.023	.178	1	
BL	-.273	-.214	.231	-.011	-.19	-.19	-.281	1

HL=High/Low Grouping; MA=Maternal Age; MM=Maternal Marital Status; ME=Maternal Education; I1=Observed Physical Contact; I2=Observed Eye Contact; I3=Observed Adjectival Reference; I4=Observed Conversation; I5=Observed Reprimand; I6=Observed Praise; BE=Observed Behavior; MTR=(MPI)Motor Problems; LNG=(MPI)Language Problems; BL=Blishen Index Score

Table 21

Summary Table: Pearson Product-Moment Correlations of Measures of Concept Development

	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11
M1	1										
M2	.504	1									
M3	.459	.415	1								
M4	.482	.589	.753	1							
M5	.424	.618	.657	.791	1						
M6	.298	.672	.316	.621	.75	1					
M7	.378	.517	.559	.722	.658	.537	1				
M8	-.026	-.314	.023	-.209	-.159	-.204	-.274	1			
M9	.006	-.296	-.032	-.24	-.174	-.268	-.288	.684	1		
M10	.082	-.237	.019	-.168	-.069	-.141	-.131	.543	.696	1	
M11	-.039	-.155	-.025	-.111	-.169	-.086	-.187	.594	.467	.468	1
C1	.169	.418	.453	.547	.543	.531	.478	-.263	-.354	-.155	-.236
C2	.292	.529	.463	.644	.603	.573	.557	-.217	-.199	-.177	-.168
VC1	.495	.561	.677	.646	.587	.427	.542	-.059	-.109	-.046	.052
VD2	.499	.52	.494	.569	.514	.403	.458	-.008	-.014	-.051	.125
VS3	.47	.528	.657	.652	.623	.405	.51	-.125	-.151	-.086	-.019
VM4	.482	.582	.59	.616	.603	.454	.508	-.12	-.142	-.022	.036
VT5	.524	.613	.65	.679	.646	.48	.561	-.102	-.135	-.065	.037
PPT	.298	.446	.616	.65	.489	.411	.49	-.19	-.209	-.176	-.053
HL	.179	.428	.531	.516	.466	.356	.546	-.313	-.373	-.338	-.156

Table 21 (Cont.)

Summary Table: Pearson Product-Moment Correlations of

Measures of Concept Development

	C1	C2	VC1	VD2	VS3	VM5	VT5	PPT	HL
C1	1								
C2	.802	1							
VC1	.539	.606	1						
VD2	.344	.496	.8	1					
VS3	.592	.614	.851	.797	1				
VM4	.558	.574	.769	.672	.78	1			
VT5	.561	.635	.936	.885	.933	.886	1		
PPT	.68	.75	.726	.595	.712	.621	.72	1	
HL	.548	.512	.537	.389	.622	.557	.587	.526	1

M1=(MPI)Self-Help; M2=Fine Motor; M3=Expressive Language; M4=Comprehension; M5=Memory; M6=Letter Recognition; M7=Number Comprehension; M8=Immaturity; M9=Hyperactivity; M10=Behavior Problems; M11=Emotional Problems; C1=Think It Through; C2=How Much and How Many; VC1=(VABS)Communication; VD2=Daily Living; VS3=Social and Leisure Skills; VM4=Motor Skills; VT5=VABS Total; PPT=PPVT-R; HL=High/Low Grouping

Table 22

Summary Table: Pearson Product-Moment Correlations of Measures of Socioemotional and Self-Concept Development

	TS	TT	TP	PT1	P2	P3	P4	P5	P6	P7	K1
TS	1										
TT	.347	1									
TP	.146	.3	1								
PT1	.176	.142	.736	1							
P2	.074	-.056	.46	.758	1						
P3	.135	.148	.626	.778	.445	1					
P4	.125	.107	.496	.685	.364	.518	1				
P5	.203	.081	.517	.723	.492	.552	.438	1			
P6	.208	.293	.604	.719	.374	.461	.298	.458	1		
P7	-.044	-.105	.382	.485	.279	.414	.215	.213	.252	1	
K1	-.291	-.628	-.405	-.227	-.001	-.244	-.116	-.254	-.315	-.063	1
K2	-.344	-.285	-.393	-.213	.026	-.244	-.123	-.168	-.326	-.082	.809
K3	-.377	-.621	-.387	-.195	.041	-.255	-.117	-.189	-.256	-.119	.881
K4	-.316	-.657	-.284	-.169	-.005	-.212	-.074	-.161	-.241	-.03	.773
K5	-.347	-.571	-.245	-.048	.097	-.16	-.107	-.063	-.08	.106	.671
K6	-.328	-.63	-.362	-.222	-.005	-.235	-.127	-.158	-.297	-.153	.776
K7	-.266	-.503	-.14	-.147	-.078	-.072	-.03	-.231	-.208	.02	.457
K8	-.18	-.122	-.201	-.234	-.18	-.081	-.097	-.311	-.293	.071	.449
KT9	-.371	-.698	-.378	-.216	.003	-.238	-.118	-.219	-.305	-.058	.905
J1	.346	.236	.049	.068	.059	0	-.096	.139	.23	-.15	-.29
HL	.399	.241	.348	.406	.238	.31	.187	.317	.444	.178	-.354

Table 22 (Cont.)

Summary Table: Pearson Product-Moment Correlations of Measures of Socioemotional and Self-Concept Development

	K2	K3	K4	K5	K6	K7	K8	KT9	J1	HL
K2	1									
K3	.904	1								
K4	.901	.852	1							
K5	.666	.715	.651	1						
K6	.866	.85	.813	.607	1					
K7	.452	.463	.448	.244	.574	1				
K8	.317	.355	.309	.123	.393	.592	1			
KT9	.44	.951	.916	.728	.911	.605	.468	1		
J1	0	-.163	-.126	-.086	-.29	-.301	-.297	-.254	1	
HL	-.356	-.368	-.211	-.14	-.392	-.156	-.248	-.341	.462	1

TS=(TOESD)Student; TT=(TOESD)Teacher; TP=(TOESD)Parent; PT1=(PSI)Total; P2=Adaptability, P3=Acceptability; P4=Demandingness; P5=Mood; P6=Distractibility/Hyperactivity; P7=Reinforces Parent; K1=(KSS)Independent Task Work; K2=Group Attending/Participation; K3=Following Group Activity; K4=Appropriate Classroom Behavior; K5=Self-Care; K6=Direction Following; K7=Social/Play Skills; K8=Functional Communication; KT9= KSS Total; J1=Joseph; HL=High/Low Grouping

Table 23

Summary Table: Pearson Product-Moment Correlations of Selected HOME, Conceptual and Behavior Scores

	H1	H2	H4	H5	H6	P2	P3	P4
H1	1.000							
H2	0.657	1.000						
H4	0.586	0.620	1.000					
H5	0.623	0.563	0.414	1.000				
H6	0.632	0.633	0.574	0.554	1.000			
P2	0.195	0.320	0.314	0.199	0.229	1.000		
P3	0.376	0.507	0.402	0.212	0.418	0.445	1.000	
P4	0.212	0.169	0.222	0.092	0.250	0.364	0.518	1.000
P5	0.328	0.465	0.305	0.240	0.415	0.492	0.552	0.438
P6	0.518	0.433	0.414	0.221	0.520	0.384	0.467	0.301
P7	0.254	0.292	0.218	0.077	0.123	0.279	0.414	0.215
K1	-0.337	-0.324	-0.317	-0.235	-0.411	-0.001	-0.244	-0.116
K2	-0.362	-0.391	-0.392	-0.222	-0.416	0.026	-0.244	-0.123
K3	-0.348	-0.365	-0.354	-0.230	-0.414	0.041	-0.255	-0.117
K4	-0.227	-0.312	-0.294	-0.105	-0.294	-0.005	-0.212	-0.074
K6	-0.396	-0.426	-0.363	-0.283	-0.439	-0.005	-0.235	-0.127
K7	-0.123	-0.272	-0.110	-0.205	-0.245	-0.078	-0.072	-0.030
K8	-0.187	-0.127	-0.259	-0.322	-0.221	-0.160	-0.076	-0.081
J1	0.495	0.293	0.232	0.481	0.337	0.059	-0.000	-0.096
M3	0.432	0.388	0.169	0.488	0.265	0.040	0.245	0.173
M6	0.368	0.384	0.367	0.477	0.427	0.131	0.210	0.061
M9	-0.575	-0.483	-0.383	-0.270	-0.606	-0.227	-0.468	-0.349
C1	0.568	0.303	0.325	0.422	0.479	0.096	0.094	0.049
C2	0.545	0.364	0.439	0.360	0.412	0.135	0.257	0.057
VC1	0.408	0.387	0.461	0.392	0.401	0.103	0.364	0.110
PPT	0.509	0.363	0.321	0.401	0.374	0.182	0.221	0.005
HL	0.744	0.514	0.583	0.531	0.626	0.238	0.310	0.187

Table 23 (Cont.)

Summary Table: Pearson Product-Moment Correlations of Selected HOME, Conceptual and Behavior Scores

	P5	P6	P7	K1	K2	K3	K4	K6
P5	1.000							
P6	0.464	1.000						
P7	0.213	0.258	1.000					
K1	-0.254	-0.315	-0.063	1.000				
K2	-0.168	-0.326	-0.082	0.809	1.000			
K3	-0.189	-0.258	-0.119	0.881	0.904	1.000		
K4	-0.161	-0.244	-0.030	0.773	0.901	0.852	1.000	
K6	-0.158	-0.299	-0.153	0.776	0.866	0.850	0.813	1.000
K7	-0.231	-0.211	0.020	0.457	0.452	0.463	0.448	0.574
K8	-0.265	-0.287	0.065	0.427	0.347	0.350	0.343	0.417
J1	0.139	0.226	-0.150	-0.290	-0.234	-0.163	-0.126	-0.290
M3	0.273	0.120	0.111	-0.240	-0.247	-0.286	-0.193	-0.364
M6	0.256	0.230	0.013	-0.537	-0.473	-0.493	-0.438	-0.521
M9	-0.461	-0.759	-0.119	0.398	0.383	0.328	0.276	0.347
C1	0.199	0.414	-0.125	-0.475	-0.473	-0.466	-0.343	-0.479
C2	0.201	0.429	0.024	-0.511	-0.497	-0.481	-0.444	-0.524
VC1	0.172	0.330	0.061	-0.545	-0.514	-0.504	-0.472	-0.529
PPT	0.242	0.441	-0.033	-0.387	-0.382	-0.363	-0.358	-0.465
HL	0.317	0.437	0.178	-0.354	-0.356	-0.368	-0.211	-0.392

Table 23 (Cont.)

Summary Table: Pearson Product-Moment Correlations of

Selected HOME, Conceptual and Behavior Scores

	K7	K8	J1	M3	M6	M9
K7	1.000					
K8	0.614	1.000				
J1	-0.301	-0.299	1.000			
M3	-0.350	-0.268	0.434	1.000		
M6	-0.303	-0.367	0.278	0.283	1.000	
M9	0.097	0.080	-0.227	-0.152	-0.298	1.000
C1	-0.376	-0.321	0.529	0.332	0.486	-0.426
C2	-0.416	-0.407	0.482	0.335	0.553	-0.277
VC1	-0.399	-0.553	0.340	0.455	0.468	-0.290
PPT	-0.388	-0.383	0.510	0.443	0.377	-0.345
HL	-0.156	-0.215	0.462	0.435	0.300	-0.456

Table 23 (Cont.)

Summary Table: Pearson Product-Moment Correlations of

Selected HOME, Conceptual and Behavior Scores

	C1	C2	VC1	PPT	HL
C1	1.000				
C2	0.771	1.000			
VC1	0.414	0.518	1.000		
PPT	0.632	0.707	0.559	1.000	
HL	0.500	0.443	0.408	0.443	1.000

H1=(HOME)Stimulation Through Toys, Games and Reading Materials; H2=Language Stimulation; H4=Pride, Affection and Warmth; H5=Stimulation of Academic Behavior; H6=Modeling and Encouragement of Social Maturity; P2=(PSI)Adaptability, P3=Acceptability; P4=Demandingness; P5=Mood; P6=Distractibility/Hyperactivity; P7=Reinforces Parent; K1=(KSS)Independent Task Work; K2=Group Attending/Participation; K3=Following Group Activity; K4=Appropriate Classroom Behavior; K6=Direction Following; K7=Social/Play Skills; K8=Functional Communication; J1=Joseph; M3=(MPI)Expressive Language, M6=Letter Recognition; M9=Hyperactivity; C1=Think It Through; C2=How Much and How Many; VC1=(VABS)Communication; PPT=PPVT-R; HL=High/Low Grouping